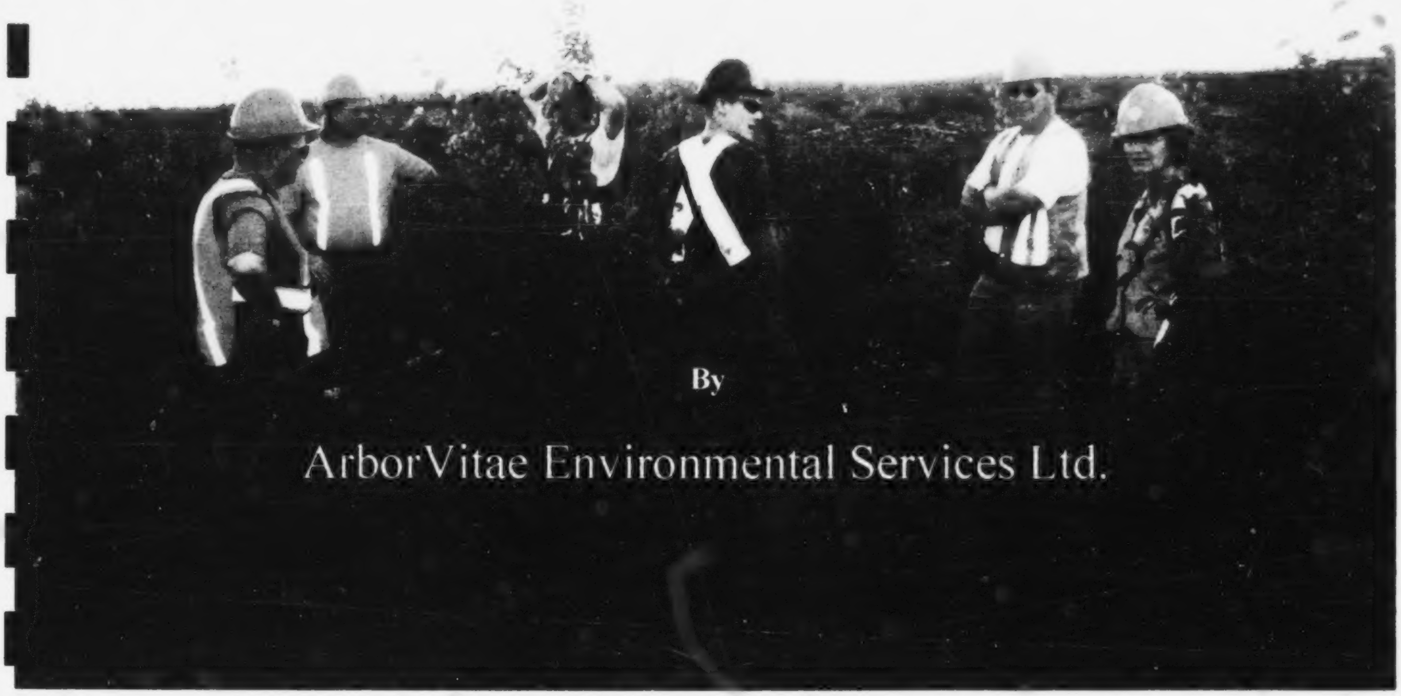
# Ogoki Forest

# Independent Forest Audit

## April 1, 2000 – March 31, 2005

# Final Report



By

ArborVitae Environmental Services Ltd.

**Submitted February 3, 2006**

2007-00828

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## Table of Contents

**1 EXECUTIVE SUMMARY** 6

**2 INTRODUCTION** 10

2.1 AUDIT PROCESS 12
*2.1.1 Purpose and overview of the process* 12
*2.1.2 Process* 13
2.2 FOREST MANAGEMENT CONTEXT 16
*2.2.1 Location of Forest Management Unit* 16
*2.2.2 Brief Description of the Ogoki Forest* 16
*2.2.3 Relevant management issues* 21

**3 SUMMARY OF AUDIT FINDINGS** 23

3.1 COMMITMENT 23
3.2 PUBLIC PARTICIPATION 24
*3.2.1 Local Citizens Committee* 24
*3.2.2 FMP Standard Public Consultation Process* 25
*3.2.3 Native People's Consultation* 26
*3.2.4 Annual Work Schedule Public Inspection* 26
3.3 FOREST MANAGEMENT PLANNING 27
*3.3.1 Planning Team Activities* 27
*3.3.2 Resource Stewardship Agreements* 28
*3.3.3 Sources of Direction* 29
*3.3.4 Introduction* 29
*3.3.5 Management Unit Description* 29
*3.3.6 Objectives and Strategies/Management Alternatives* 33
*3.3.7 Operational Planning* 35
*3.3.8 Plan Review and Approval* 41
*3.3.9 Plan Amendments* 41
*3.3.10 Contingency Plans* 43
*3.3.11 Annual Work Schedules* 43
3.4 PLAN IMPLEMENTATION 45
*3.4.1 Areas of Concern* 45
*3.4.2 Harvest* 46
*3.4.3 Renewal* 56
*3.4.4 Tending and Protection* 58
*3.4.5 Renewal Support* 59
*3.4.6 Silvicultural Achievements* 59
*3.4.7 Access* 61
3.5 SYSTEMS SUPPORT 64
*3.5.1 Human Resources* 64
*3.5.2 Documentation and Quality Control* 65
3.6 MONITORING 66
*3.6.1 General Monitoring* 66
*3.6.2 Annual Reports* 74
*3.6.3 Report of Past Forest Operations* 77
3.7 ACHIEVEMENT OF MANAGEMENT OBJECTIVES AND FOREST SUSTAINABILITY 78
*3.7.1 Achievement of Management Objectives* 79
*3.7.2 Review of the Trend Analysis of Planned vs. Actual Forest Operations* 94
*3.7.3 Review of RPFO Assessment of Sustainability* 97
*3.7.4 Conclusions Regarding Sustainability* 98
3.8 CONTRACTUAL OBLIGATIONS 99
*3.8.1 Payments to the Crown* 99
*3.8.2 Wood Supply Commitments (Appendix E)* 99

*3.8.3 Special Licence Conditions (Appendix F)* ... *100*
*3.8.4 Other Agreements* ... *104*
*3.8.5 Previous Independent Forest Audit* ... *105*
*3.8.6 Forest Renewal Trust* ... *115*
*3.8.7 Forestry Futures Trust* ... *115*
*3.8.8 Specified Procedures Field Assessment* ... *115*
*3.8.9 Inventory and Monitoring Obligations* ... *115*

**4 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS ... 117**

## List of Appendices

Appendix A. Forest Manager's Report
Appendix B. Audit Team Members and Qualifications
Appendix C. Independent Forest Audit Guiding Principles
Appendix D. List of Acronyms
Appendix E Input from Parties

## List of Tables

Table 1. Sampling intensity of the Audit ... 14
Table 2. Crown Land Area of Ogoki Forest by Land Class (ha). ... 18
Table 3. Area of Available Crown Managed Forest (ha). ... 18
Table 4. Fire return intervals used in the Ogoki Forest FMP. ... 40
Table 5. Planned and Actual Harvest Normal and Salvage Volumes (M m3/yr) ... 46
Table 6. Actual harvest volumes by the Overlapping Licence Holders. ... 49
Table 7. Trees planted (thousands) by LLFP on the Ogoki, Nakina North, and combined Forests for the four years (2000-2003) of the audit period for which data is available. ... 58
Table 8. Silvicultural accomplishments for the 1998-2003 FMP term as a percentage of the planned activities for the Nakina North and Ogoki Forests. ... 60
Table 9. Summary of the 1999-2003 draft preliminary RPFO produced to provide reference for the 2008 FMP. ... 78
Table 10. The Audit Team's Assessment of the Achievement of the Objectives of the 1998 Forest Management Plans. (Note the objectives for the Ogoki and Nakina North Forests were the same.) ... 80
Table 11. The Audit Team's Assessment of the Achievement of the Objectives of the 2003 Forest Management Plan ... 84
Table 12. Summary of Overlapping Licensee Harvest Volume in the Audit Period ($m^3$) ... 101
Table 13. Review of the implementation of recommendations made in the previous Independent Forest Audit ... 106
Table 14. Summary of Recommendations and Suggestions ... 119

## List of Figures

Figure 1. Map of Ogoki Management Unit. .......... 17
Figure 2. Age Class Distribution of Crown Managed Productive Forest by Major Species Class (Source 2003 Ogoki FMP, Table FMP-2) .......... 19
Figure 3. An example of damage caused by the 2001 snowdown event. .......... 21
Figure 4. Actual Annual Harvest Area, by Type of Harvest Operation. .......... 47
Figure 5. Average Actual Harvest Volume per Hectare, for Normal and Salvage Operations. .......... 48
Figure 6. An example of a successful slash pile burn. .......... 50
Figure 7. An example where a rocky knob had been harvested, with poor renewal. .......... 51
Figure 8. Softwood pulp logs that have been at the roadside of the Aroland overlapping licence harvesting operation for an extended period of time. .......... 51
Figure 9. An example of a closed gravel pit that has not been properly rehabilitated. Note recently planted tree in the lower right hand corner. .......... 62
Figure 10. Abandoned culverts on Stag Lake block. .......... 64
Figure 11. Comparison of old growth targets (red bars) identified in the 2003 FMP to the level of old growth predicted to be on the Forest in 2103 (blue lines) under implementation of the selected management alternative. .......... 93

# 1 EXECUTIVE SUMMARY

ArborVitae Environmental Services Ltd. performed an independent forest audit of the management of the Ogoki Forest for the period April 1, 2000 to March 31, 2005. The audit was undertaken using the Independent Forest Audit Process and Protocol (IFAPP), prepared by the Ministry of Natural Resources (MNR or the Ministry). The independent forest audit (IFA) examined compliance with the *Crown Forest Sustainability Act*, the terms of relevant licences, especially Sustainable Forest Licence (SFL) 541965 held by Long Lake Forest Products Inc., and the management plans in place for the Forest. The IFA assessed the performance of both Long Lake and the Ministry, including the effectiveness of management practices and the sustainability of forest management. The audit period spans the last three years of the 1998-2003 Forest Management Plan and the first two years of the 2003-08 Forest Management Plan.

During the period up to March 31, 2003, the Ogoki Forest was managed as two separate forest management units, the Ogoki and Nakina North Forests. Effective April 1, 2003, the two Forests were amalgamated to form the new Ogoki Forest. Both previous forests had been licensed to Long Lake Forest Products (LLFP), a member of the Buchanan Group of Companies, and so were managed in a similar way by the same staff. Thus, the amalgamation proceeded with no real change to the management team or approach.

The Ogoki Forest has only been commercially harvested on a continuous basis since 1998; prior to that there had been no harvesting and only the former Nakina North Forest had any road access. As a result, a major undertaking of the Company has been to develop a primary road network, and so there has been a substantial amount of primary and secondary road construction on the two forests. Because there had been so little road access into the Forest prior to 1998, access continues to be heavily restricted as management of the Forest for timber production has proceeded. Motorized vehicle access is prohibited north of the Ogoki River and on much of the Nakina North Forest, other than for forest company and contractor staff, Ontario government staff, and First Nations people. This arrangement was reviewed during the preparation of the 2003 FMP but the MNR District Manager decided leave it unchanged.

Not only has this arrangement helped to maintain the remote character of the Forest; it also supports the management of woodland caribou, a designated threatened species that is the featured species on the Forest from a management perspective. Caribou management is based on the twin premises that caribou are sensitive to human presence and that they require large areas of mature even-aged conifer to provide habitat. The approach that has been taken to manage for this species is to divide the forest into a number of large blocks ranging from 10,000 – 25,000 ha (known as the caribou mosaic), and organize harvesting so that roughly 1/5-th of these blocks are completely cut over during a twenty-year period, before harvesting shifts to another 1/5-th of the blocks for another twenty-year period, and so on until, after 100 years, the first set of blocks again becomes eligible for harvesting.

The Company has planned its activities according to the structure of the caribou mosaic, and is working on harvesting in the first set of blocks. The 1998 FMPs used this management approach, and refinements were made in the 2003 FMP, including extending the management cycle to 120 years on some blocks. The Ogoki Forest has not experienced a particularly high rate of natural disturbance during the last 50 years or more, and consequently is mature. Converting the Forest from an essentially "natural" forest to one that is harvested on a commercial basis will necessarily reduce the average age of the Forest, and left unharvested, forest projection models also show a decline in average age as the mature stands age and break up. Thus, if the modelling assumptions are correct, forest harvesting is taking the Forest in a similar direction to that which it would have followed if it had remained unmanaged. Nevertheless, the amount of caribou habitat will fall by 57% over the next 100 years.

The Audit Team is aware that the present management guidelines represent the Ministry's good advice on management of caribou habitat. However given evidence that caribou are a sensitive species, and that their habitat is projected to decline markedly, the Audit Team believes the Ministry must provide strong objective evidence that the projected decline in habitat will not further endanger caribou. The Audit Team recommends that the Ministry conduct an objective assessment of the viability of the caribou population on the Forest, and that the results of the assessment be incorporated into subsequent forest management plans.

Related to this issue is the conservation of old forest. The current Forest is quite old, on average, and management is projected to reduce the average age of the Forest. The projections of the area of old forest in the 2003 FMP show that future levels will be at the low end of the allowable range. The Audit Team believes that the Company can retain a higher future level of old forest without unduly impairing harvest levels.

A snowdown event that occurred in late 2001 caused widespread damage across the Ogoki Forest, ranging from blowdown to heavy damage of stands, including the snapping of the tops of conifers. Consequently, there was a great deal of salvage harvesting conducted during the audit period. Due to the widespread and variable nature of the damage, the Company has not fully assessed its extent and or its effect on growth and yield. A recent transfer of the responsibility for forest inventory from Industry to the Crown suggests that the Crown should take the lead in resolving these uncertainties, although it is not yet clear what the new inventory process will be.

Enabling First Nations to benefit from forest sector activity is an area where, despite the best efforts of the Company, the MNR, and the First Nations, the results have been unsatisfying. Some First Nations people have been able to benefit from forest sector activities on the Ogoki Forest – many employees at the Longlac mill, and some in the Nakina mill (both of which are largely supplied from the Ogoki Forest) are First Nations individuals. Some other First Nations people have been engaged in tree planting, fire suppression, and cone collection, and one has started up a delimbing contract business.

However, all three First Nations communities started up logging companies and, at the time of the audit site visit, none of them had been operating for roughly two years. The explanation provided to the Audit Team was that a lack of management capability had essentially undermined the ability of these companies to operate. Furthermore, the Audit Team saw evidence of many compliance deficiencies on sites that had been harvested by the First Nations companies. Understandably, the Ministry initially provided some leeway but a lack of improvement over time suggested that this lenient approach may not have served the broader purpose of fostering capacity.

Measures had been put in place to try to provide access to expertise and training. Three

Nations Management Inc. was a management advisory company formed to provide a liaison between the First Nations, the Company and MNR, to provide training opportunities to First Nations members, to provide accounting and administrative services, and direction regarding technical compliance issues. Buchanan provided $500,000 to help set up and operate TNMI. Despite these efforts, at the time of the site visit, the First Nations, MNR and Company staff were all very disappointed with the outcome of the First Nations logging initiatives. The Audit Report urges all parties to continue their efforts to bring economic benefits to First Nations. Subsequent to the IFA site visit, the First Nations indicated that they wished to re-start their logging operations and were willing to meet some pre-conditions – while one wishes to be optimistic, it does not seem as though measures have been put in place to correct the problems which derailed previous efforts.

Many of the Audit Team members also participated in the previous IFA on the Ogoki and Nakina North Forests, which was conducted in 2000. It has been interesting to see the roll-out of forest management on a previously unharvested forest. The harvest operations during the audit period were better planned and organized than those seen during the 2000 IFA. Improvement could be made in how harvesting proceeds on the sensitive areas within upland sites, and a recommendation was directed at the Company to provide a better identification of sites which are suited to careful harvest around advanced growth. Hardwood utilization has improved, but remained sub-optimal. In addition, the construction of water crossings merited further attention, as a number of poorly constructed crossing were seen by the auditors.

At the time of the previous audit, there had been little silviculture undertaken but this time, the silvicultural program had been operating and generally produced good results. LLFP has developed an excellent monitoring program to support its silviculture program and to evaluate the effectiveness of silviculture – this merited a "best practice".

Regenerated forest had not yet reached the stage where it had been tended, but several of the renewal areas seen by the Audit Team had sufficient competition that tending is recommended. The Company and MNR have been hesitant to begin tending due to opposition from First Nations and the nature of local public interests, but tending will be required to ensure the survival of conifer on some of the sites viewed. A series of demonstration plots might allay some of the concerns related to herbicide use.

Other areas that merited recommendations were document control, compliance planning and inspection, and annual reporting (both the Company and MNR were frequently quite late in submitting and reviewing Annual Reports). The performance of the Local Citizens Committee (LCC) was found to be exemplary and merited a "best practice". Some of the special conditions placed in the original SFLs for the former Ogoki and Nakina North Forests, and transferred to the new Ogoki Forest SFL, were outdated – it was recommended that these be reviewed.

One issue which carried over from the previous audit to this one concerned a commitment made by the Company to build a garage/office complex in Geraldton. This promise was made by the Company in its original proposal for the Ogoki and Nakina North Forests, and could have been one of the factors which contributed to the MNR's decision to award licences for the two Forests to the Company. The Company has purchased a site on the outskirts of Geraldton but construction has not started and there are widespread doubts within the community that the Company intends to follow through with this commitment, even though the Company states that it will. The Company says that it does not presently have access to the required capital due to the difficult state of the industry, but the length of time elapsed since the original commitment has given rise to these doubts. This is a very symbolic issue, and the Audit Team has recommended that the Company meet with the Regional Director to decide how to address it. It would harm the credibility of the MNR as well as the Company if the Company was able to avoid fulfilling its original commitment.

In summary, while there are some important issues on this Forest, management is generally of a high quality. The Company has come a long way since the previous audit and is eager to continue to improve. MNR and the Company have a good rapport, which is a pleasure to see, and the LCC is functioning well.

The Audit Team concludes that the Company was in compliance with the Crown Forest Sustainability Act, the terms of the SFL, and existing forest management guides and plans.

**The Ogoki Forest is being managed within the bounds of sustainability and the licence should be extended for a further five-year period. Key issues which must be addressed to ensure that management of the Forest remains sustainable are: determining the impact of the snowdown event and incorporating its effects into future management; resolving issues related to the management and objectives of old forest and caribou; and continuing to strive for meaningful First Nations gain from management of the Forest.**

Jeremy Williams

Jeremy Williams, Lead Auditor

## 2 INTRODUCTION

This report presents the results of the Independent Forest Audit of the Ogoki Forest Management Unit, covering activities during the period April 1, 2000 to March 31, 2005. Prior to April 1, 2003, the Ogoki Forest was managed as two separate forests under two separate licences issued to Long Lake Forest Products Inc. (LLFP), which is a member of the Buchanan Forest Products group of companies. The original Ogoki Forest was licensed under SFL #541965 and the Nakina North Forest under SFL #541980. There were separate management plans for each forest, both for the term April 1, 1998 to March 31, 2003.

During the audit period, the current Ogoki Forest was created by merging together the Nakina North Forest with the former Ogoki Forest. Because the Nakina North was quite a small forest by current Ontario standards, and the two forests were adjacent to each other, managed in a similar manner, and licensed to LLFP, the Ontario Ministry of Natural Resources (MNR) approved the Company's request to merge them. The amalgamated Ogoki Forest is of average size for an SFL area in Ontario.

The current Forest Management Plan (FMP) came into force on April 1, 2003 and extends to March 31, 2008. It was written for the amalgamated Ogoki Forest, which is designated as Forest Management Unit #415. The Sustainable Forest Licence for the new Ogoki Forest (SFL #541965) was signed by the Minister of Natural Resources on March 18, 2004.

The audit period covers the operations on the Forest conducted during the last three years of the 1998 FMPs for both former forests, and the first two years of the current FMP, as well as the preparation of the 2003 FMP. The audit also reviews and assesses the activities of the MNR during this period. MNR is the provincial Ministry with the primary responsibility for managing the province's Crown forests and, as such, it oversees and regulates planning and operations on the Ogoki Forest. The MNR also has management responsibility for wildlife. The MNR District of Nipigon, located in the Northwest Ontario administrative region, is the lead District for the Ogoki Forest – most of the MNR field staff directly involved in the regulation and management of the Forest are located in an Area Office in Geraldton.

The Ogoki Forest is unusual in that forest management operations have been undertaken continuously only since 1998. Prior to the early 1990's, the former Ogoki Forest was licensed to Kimberly Clark Canada Inc. (KCC) but the company relinquished its licence in 1990 as the Forest was surplus to its needs. In 1993, KCC sold its sawmill in Longlac, which had been closed since 1987, to LLFP. After accepting LLFP's offer for the sawmill, KCC requested that MNR sever the northern portion of the Nakina Forest to create a new management unit and transfer the associated licence to LLFP. The Ministry did not accede to this request, instead opting to request proposals for forest development projects based on the two units. The outcome of this competitive process was that LLFP was awarded SFLs for the Ogoki and Nakina North Forests. As part of the bid, LLFP re-opened and re-furbished the Longlac sawmill and agreed to build a new sawmill in Nakina. The local economic benefits from these mills have been substantial. Several significant conditions were attached to the licences, including wood supply commitments, requirements to foster economic development in Aboriginal and local communities, work co-operatively with remote tourism operators, and establish a Board of Direction. These conditions, and LLFP's performance in meeting them, are reviewed later in this report.

LLFP operations staff are mainly based at the Ogoki Woodlands Camp located in the middle of the Forest. Key LLFP planning staff, and the main mapping, planning and record keeping functions, are housed in the Buchanan Forest Products Group office in Thunder Bay. The Ogoki camp does not have internet access, which limits its use for activities that require data transfer and record access – for this reason, the Jellico office, which has internet access, has recently been used as a site for entering and submitting electronic compliance reports.

Although LLFP holds the SFL for the Ogoki Forest, the position of LLFP within the Buchanan Forest Products group is such that much of the strategic management direction for the Forest, and staffing support, is provided by staff of the Buchanan Group who are not directly employed by LLFP. As a result of this arrangement, the scope of the audit extends beyond LLFP to include the relevant functions and staff of the Buchanan Group. While all of this audit's recommendations and suggestions that are directed at the Company apply to LLFP, to the extent that the broader organization is involved in relevant decision-making, it may play a role in developing and carrying out the action plan that results from this audit.

The Crown Forest Sustainability Act (CFSA) empowers the Minister of Natural Resources to manage Crown forests in Ontario and also provides the legislative basis for the Independent Forest Audits. The scope and process of an Independent Forest Audit (IFA) is set out in the Independent Forest Audit Process and Protocol (IFAPP), which is prepared by the MNR. The IFAPP, which is reviewed and updated annually, contains more than 300 individual audit procedures. Of these, roughly 250 apply to this IFA. The results of each audit procedure are not reported separately in this report. Rather, they have provided the basis for the information in the following sections (primarily Section 3), where noteworthy aspects of the management of the Forest are discussed. These discussions are followed in some instances by recommendations or suggestions. The IFAPP gives explicit definitions of these terms:

***Recommendation*** - "sets out a high level directional approach to addressing a non-conformance. In most cases, recommendations follow from the observation of material non-conformances. In some instances, however, auditors may develop recommendations to address situations where they perceive a critical lack of effectiveness in forest management activities, even though no non-conformance with law or policy has been observed."

***Suggestion*** - "value-added advice which reinforces adaptive resource management and contributes to continuous improvement."

Of these two types of findings, recommendations are the more serious. Both recommendations and suggestions can be directed towards the Company and/or the Ministry of Natural Resources. Finally, if the Audit Team feels that an aspect of forest management is exceptional it may be identified as a best practice. The IFAPP provides the following definition:

***Best practices*** – "practices so identified should be 'exceptional', not situations in which forest management is simply meeting a good forest management standard. Highly effective novel approaches to various aspects of forest management may represent best practices. Similarly, applications of established management approaches which achieve remarkable success may represent best practices."

The Audit Team found situations which should be corrected by the tenure holder acting in concert with district or regional MNR offices. Other situations which we believe need corrective action, however, are more appropriately addressed by the corporate sections of MNR. These situations involve issues related to the general framework of forest management in Ontario, and although they have been manifested locally (hence, they surfaced in this audit), their resolution lies not in the field offices of MNR, but in the Main Office, Forest Management Branch, or other corporate parts of MNR. Issues which we believe should be addressed by the field units of MNR (i.e. District or Regional Offices) are addressed in recommendations or suggestions which simply identify "MNR". Recommendations or suggestions which we believe should be addressed by central branches or sections of MNR identify "corporate MNR" as having primary responsibility.

The team which conducted this audit consisted of five individuals, all experienced forest auditors, and all specialists in various aspects of forest management. Appendix B provides details of their qualifications, roles and responsibilities.

Forest management in Ontario (and elsewhere) uses a variety of technical terms. We have tried to explain terms as they are used in this document, but readers unfamiliar with the forest management planning process in Ontario are referred to the document "A Guide to Forest Management Planning"[1] (available from the Ministry of Natural Resources) for further explanations. Appendix D lists the acronyms used in this report.

## 2.1 AUDIT PROCESS

### *2.1.1 Purpose and overview of the process*

The CFSA directs the Minister of Natural Resources to conduct a review of each tenure-holder every five years to ensure that the licensee has complied with the terms and conditions of its licence. The Independent Forest Audit fulfills this mandate, as well as complying with the direction to the Ministry laid out in Terms and Conditions #86 and 87 and Appendix 25 of the 1994 Class EA decision to "*undertake operational audits, through the appointment of suitably qualified independent audit teams, which will include an assessment of compliance with the timber management planning process, approved Timber Management Plans, implementation manuals, and provincial policies, procedures, and legislation*". The Declaration Order[2] confirmed the importance of the IFAs and imposed some additional conditions on MNR; direction regarding the conduct of the audits is provided in Ontario Regulation 160/04 under the CFSA.

The IFAPP document states that the purpose of the audits is:

- *"assess to what extent forest management planning activities comply with the*

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[1] Ontario Ministry of Natural Resources. 1997. A Guide to Forest Management Planning. Ontario Ministry of Natural Resources Forest Information Series. 16 p.

[2] Declaration Order regarding MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario, approved by Order in Council 1389/03 on June 25, 2003.

*Forest Management Planning Manual and the [Crown Forest Sustainability] Act;*

- *assess to what extent forest management planning activities comply with the Act and with the forest management plans, with the manuals approved under the Act, and the applicable guides;*
- *assess the effectiveness of forest management activities in meeting the forest management objectives set out in the forest management plan, as measured in relation to the criteria established for the audit;*
- *compare the forest management activities carried out with those that were planned;*
- *assess the effectiveness of any action plans implemented to remedy shortcomings revealed by a previous audit; and*
- *review and assess a licensee's compliance with the terms and conditions of the forest resources licence."*

### *2.1.2 Process*

The IFAPP describes each of the components of the audit process and contains the audit protocol, which constitutes the main framework for the audit. There are eight principles within the audit protocol (reproduced in Appendix C). Each principle contains a series of criteria, which, if met, will result in the principle being achieved. For each criterion, a number of procedures are used to assess the auditees' compliance and effectiveness. As noted above, there are approximately 250 individual procedures that were applicable to this audit of the Ogoki Forest.

The audit commenced with the preparation of a detailed audit plan[3], which described the procedures to be used during the audit and assigned responsibilities to members of the Audit Team. A pre-audit meeting was held between representatives of the Audit Team, LLFP, and MNR. The primary purposes of the meeting were to familiarize the auditees with the audit process, review the Audit Plan, discussing any issues raised by the Local Citizens Committee (LCC), general public or other interested party, and to select the sites to be inspected in the field during the audit.

The focus of the audit was an intensive six-day site visit, which included the following:

- review of relevant files at offices of the Company and the Ministry in Geraldton, as well as visits to Long Lake Forest Products offices in Thunder Bay;
- interviews with LLFP staff, commitment holders and overlapping licensees, MNR personnel, members of the LCC; and
- field inspection of many representative sites where the forest management activities were undertaken during the term covered by the audit, examining:
    - results of harvesting and silvicultural operations in a range of forest types on different site types;
    - results of practices intended to safeguard wildlife, aquatic, and tourism values; and
    - results of road construction, maintenance, and abandonment practices.

The Audit Team visited a variety of sites throughout the portion of the Forest where activities had been undertaken during the audit period.

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[3] ArborVitae Environmental Services Ltd. Ogoki Forest Independent Forest Audit Plan, June 20, 2005.

Table 1 shows the sample size and sampling intensity for key operations, with the figures for the 2000/01-2002/03 years representing the total activity on both the former Nakina North and Ogoki Forests, prior to their amalgamation effective April 1, 2003. The IFAPP required the Audit Team to sample between 10 and 20% of the area treated during the audit period for harvesting, site preparation, and other key activities. The audit was within or exceeded this desired sample size for all activities except for areas of concern (AOC); the shortfall occurred because the planned helicopter rental was cancelled due to fire, which resulted in more areas being viewed by truck (which is less conducive to AOC assessment). Although less than 10% of the AOCs in the plan period were evaluated, the actual number is large enough that a representative assessment was obtained.

**Table 1.** Sampling intensity of the Audit.

| Feature | Total in Audit Period* | Total Sampled | Sample Intensity % |
|---|---|---|---|
| Harvest (ha) | 25,174 | 3,471 | 13.8 |
| Site Preparation (ha) | 9,122 | 1,215 | 13.3 |
| Natural Regeneration (ha) | 5,245 | 1,693 | 32.3 |
| Artificial Regeneration (ha) | 10,138 | 1,059 | 13.1 |
| Tending (ha) | 0 | 0 | n/a |
| 2003 FRT Areas (ha) | 8,234 | 1,902 | 23.0 |
| AOCs | Approx 600 | Approx 50 | 8.3 |
| Road construction (km) ** | 800 | 400 | 50.0 |
| Bridges and culverts installed in audit period | approx. 20 | 15*** | 75% |

*Preliminary harvest data for 2004/05 were used to develop the total area of harvest operations for the audit period. Preliminary harvest area was 5552.5 ha. Areas of silviculture achieved in 2004/05 were pro-rated based on the previous four years or operational area.

** The figure for road construction during the audit period is based on reported primary and secondary road construction, and estimated tertiary road construction. The Audit Team drove over more than 1,000 km of road during the audit, some of which was constructed prior to the audit period.

***Many additional previously-installed culverts and cross drainage culverts were inspected on an ad hoc basis during the site visits

In Table 1, the total in the audit period refers to the areas that were harvested (salvage and normal operations), site prepared, and renewed during the audit period, the area of the sites reviewed in specified procedures undertaken by KPMG for the 2003-04 fiscal year (2003 FRT areas), an estimate of the total number of Areas of Concern in blocks depleted in the audit period, the total kilometres of primary and secondary road and the number of major water crossings constructed during the audit period. Because silvicultural area figures were not available for 2004-05 fiscal year at the time of the audit, the total from the first four years of the audit period has been increased by 25% to arrive at an estimate of the total area treated during the audit period.

The next column to the right shows the total area of the treatments viewed during this audit. Because the block designation methodology used by the Company leads to the formation of large and complex operational blocks, the area of the harvested stands and of silvicultural treatments within the block that we viewed is shown. The sampling intensity is calculated by dividing the area of treatments viewed by the total area (or other relevant measurement statistic) during the five-year period.

The ability to sample Company operations was affected by a large fire in the Gordon Creek area, in the southwest portion of the Forest, in late spring 2005. This fire burned roughly 14,000 ha, much of which was area that had been harvested and treated by the Company during the audit period. Because the burn was severe, the Audit Team was unable to evaluate these areas of Company activity that had taken place during the audit period. In addition, it should be noted that the Audit Team had planned to conduct the aerial portion of the field inspection by helicopter, but due to an increase in fire activity at the start of the audit week, the helicopter that had been booked was requisitioned by MNR for fire duty, two days prior to the planned flight. The Audit Team was able to charter a small fixed-wing plane from a local tourism operator, but this could not land at specific sites. Because there was no tending or free-to-grow assessment conducted on the Forest during the term of the audit, the lack of availability of the helicopter was less of a concern than it would have otherwise been. In addition, most of the selected sites were road accessible, and the Audit Team spent additional time on the ground to field check sites that had been planned for helicopter reconnaissance.

Table 1 is intended to portray an approximate level of effort only. There are several factors which preclude too-precise an interpretation of the figures presented in the table. Although roughly 50 stops were made during the field inspection portion of the audit, more than one aspect of forest management was inspected at most stops. For example, at stops where harvesting had taken place, harvest practices, compliance issues, road construction, Area of Concern (AOC) protection, site preparation, and regeneration activities may all have been inspected. Finally, although stand and treatment areas are shown in Table 1 it should be noted that we did not inspect every hectare of the blocks we visited – such a level of effort would be infeasible.

Examples of operations were examined in each major forest unit present on the Forest, representing a range of harvesting systems, harvest operators, and silvicultural treatment packages. These included sites that had been harvested in the audit period using clearcut and careful logging around advanced growth (CLAAG) systems. A number of sites where renewal activities had been conducted during the audit period were visited to evaluate the appropriateness and quality of these treatments and to perform an initial evaluation of their effectiveness. These included sites that were scarified, planted, seeded, and those for which natural regeneration was planned.

The audit is also required by IFAPP to review a minimum of 20% of the sites on the Forest that had received funding from the Forest Renewal Trust (FRT) during the 2003-2004 fiscal year. Expenses and records for these operations had been reviewed in the office by KPMG and documented in a specified procedures report. The MNR required that the IFA examine silvicultural activity record keeping and verify in the field the reported activities reviewed by KPMG. As shown in Table 1, the Audit Team viewed 23% of the area harvested by CLAAG, site prepared, seeded and planted for which invoices were reviewed by KPMG. (See also section 3.8.)

## 2.2 FOREST MANAGEMENT CONTEXT

### *2.2.1 Location of Forest Management Unit*

The Ogoki Forest is at the northern boundary of commercial forestry in northwest Ontario (Figure 1). It is located northeast of Lake Nipigon, within the Arctic watershed, and has an irregular shape. The Ogoki Forest's northern boundary is the Albany River and, adjacent and to the west of the northern part of the Ogoki licence area lies Wabakimi Provincial Park. Southwest there are two forest management units licensed to Domtar Inc: the Armstrong and Lake Nipigon Forests. The Kenogami Forest, licensed to Kimberly Clark Canada, is located to the immediate southeast of the Ogoki Forest.

The Ogoki Forest is 188 km northwest of Geraldton and 196 km north of Longlac[4]. Road access to the Forest is provided by Highway 584, which runs north from Highway 11 (the Trans-Canada Highway) at Geraldton as far as Nakina and Aroland (both approximately 90 km southeast of the Forest). From Nakina, Highway 643 runs to the boundary of the Forest - access into the Forest is via logging road. One main logging road crosses the Ogoki River and enters the northern part of the Forest (the former Ogoki Forest) and a second major road bisects the southern part of the Forest – the former Nakina North Forest.

Aroland is a predominantly First Nations community located on Reserve 83. In addition, two remote First Nations communities located on reserves north of the Albany River have interests in the Forest – Eabametoong First Nation and Marten Falls First Nation. Recently, it has emerged that a fourth First Nation, the Animbiigoo Zaagi'igan Anishinaabek (AZA), has an interest in the southern part of the Ogoki Forest. The community is located near Beardmore, and a representative of the Band has recently joined the LCC for the Ogoki Forest.

### *2.2.2 Brief Description of the Ogoki Forest*

This section presents an overview of key characteristics of the Ogoki Forest – more detailed description can be found in the 2003 FMP, which was the source of much of the material presented here.

The Forest covers somewhat more than 1 million hectares in total, the majority of which is Crown forest. Only 2,438 ha is under patent ownership. Table 2 shows the area of Crown land, including parks, unmanaged, and managed area, by land class. Of the total forest land area, 19,551 ha is in provincial parks and 14,372 ha is considered to be unmanaged. (Roughly 31,000 ha of water area is in parks or the unmanaged classification.) While a substantial portion of the Ogoki Forest is covered with water, 71% of the area is capable of supporting forest management. A total of 12.6% of the Crown area is protection forest, which is on sensitive or low productivity sites that are not suited to sustainable harvesting operations.

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[4] The communities of Longlac, Geraldton, Jellicoe, Nakina and Beardmore, were amalgamated to form the Greenstone municipality, but since these communities are separated by substantial distances, they will be identified by their individual community names throughout this report.

**Figure 1: Location of the OGOKI FOREST in ONTARIO**

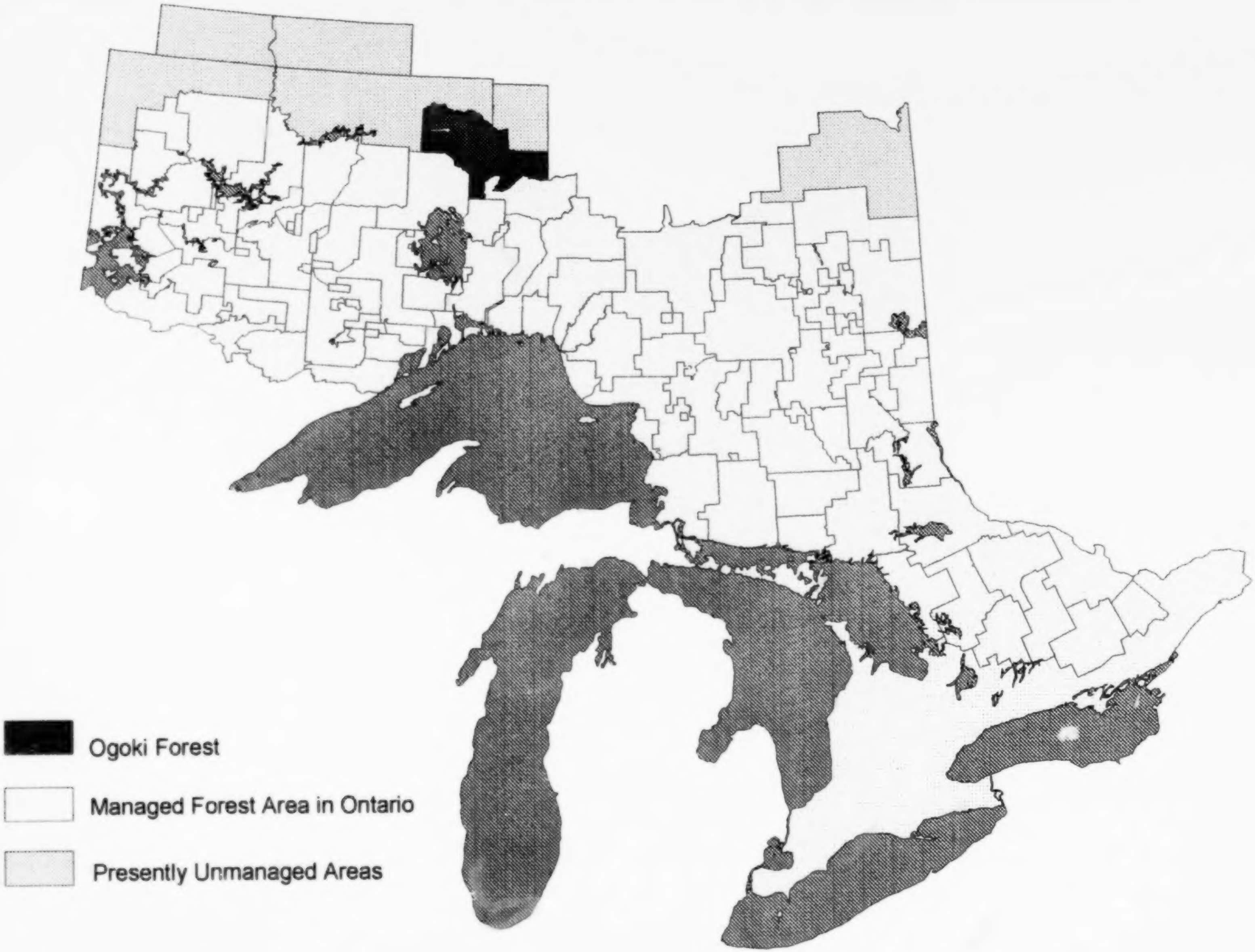

**Table 2. Crown Land Area of Ogoki Forest by Land Class (ha).**

| Land Class | Area (ha) | Percentage[a] |
|---|---|---|
| Production Forest[b] | 775,111 | 71.3 |
| Protection Forest[c] | 136,826 | 12.6 |
| Non-Productive Forest[d] | 59,139 | 5.4 |
| *Total Forest* | 971,076 | 89.3 |
| Water | 115,050 | 10.6 |
| Unsurveyed/ unclassified | 1,500 | 0.1 |
| Total Area | 1,087,626 | |

**(Source 2003 Ogoki FMP, Table FMP-1)**

[a] – Percent of total area

[b] – Production forest is land capable of supporting forest management.

[c] – Protection forest includes forests on sensitive soils and islands.

[d] – Non-productive forest includes areas incapable of growing commercial tree, such a muskeg, rock, brush, etc.

Table 3 shows the area of managed Crown forest that is available for commercial forestry operations, by forest unit. The total area shown in Table 2 is somewhat less than the area of production forest in Table 2, because productive forest area in parks, other unmanaged Crown lands, and protection forest, is excluded from the available Crown managed landbase.

The strong presence of black spruce, which is reflective of the far northern location of the Forest, distinguishes the Ogoki from most other boreal forest management units in the province. Black spruce dominated stands cover approximately 66% of the available Crown forest. Jack pine and poplar are both important commercial species that have a moderate areal representation on the Forest, but which have higher yields per hectare than black spruce. White birch, larch, eastern white cedar and white spruce are also common species, but with the exception of white spruce, are not particularly sought after unless they are of high quality.

**Table 3. Area of Available Crown Managed Forest (ha).**

| Forest Unit (FU) | Available Crown Managed Forest | Percentage[a] |
|---|---|---|
| Productive spruce lowland | 118,526 | 15.9% |
| Low productivity spruce lowland | 124,223 | 16.6% |
| Spruce Upland | 262,595 | 35.2% |
| Jack Pine | 54,336 | 7.3% |
| Poplar | 55,637 | 7.4% |
| Mixed Conifer | 69,069 | 9.2% |
| Hardwood Dominated Mixedwood | 21,580 | 2.9% |
| Conifer Dominated Mixedwood | 40,540 | 5.4% |
| TOTAL | 746,506 | 100% |

**(Source 2003 Ogoki FMP, Table FMP-3)**

[a] - Percent of available Crown managed forest

Since continuous forest operations only begun on the Ogoki Forest in 1998, the Forest is relatively unaffected by human activities. The Forest was until recently part of the extensive fire management zone, where only fires that posed threats to public safety or local values such as houses and lodges were fought. Thus, the Ogoki Forest might be considered to be nearly representative of a "natural" forest, recognizing that prior to the arrival of European influence in the area, the character of forests would have fluctuated in terms of average age, species distribution, and other factors affected by natural disturbance.

Figure 2 shows that the Forest has a very mature character, largely influenced by spruce. This is not particularly surprising, though, since 32% of the Forest is spruce lowland, which is not susceptible to burning unless conditions are extremely dry. The upland portion of the Forest is not as old – the majority of the jack pine working group is in the 61-80 year age class and the poplar forest component is largely between 81 – 120 years of age. There is a dearth of area in the 21-60 year age classes.

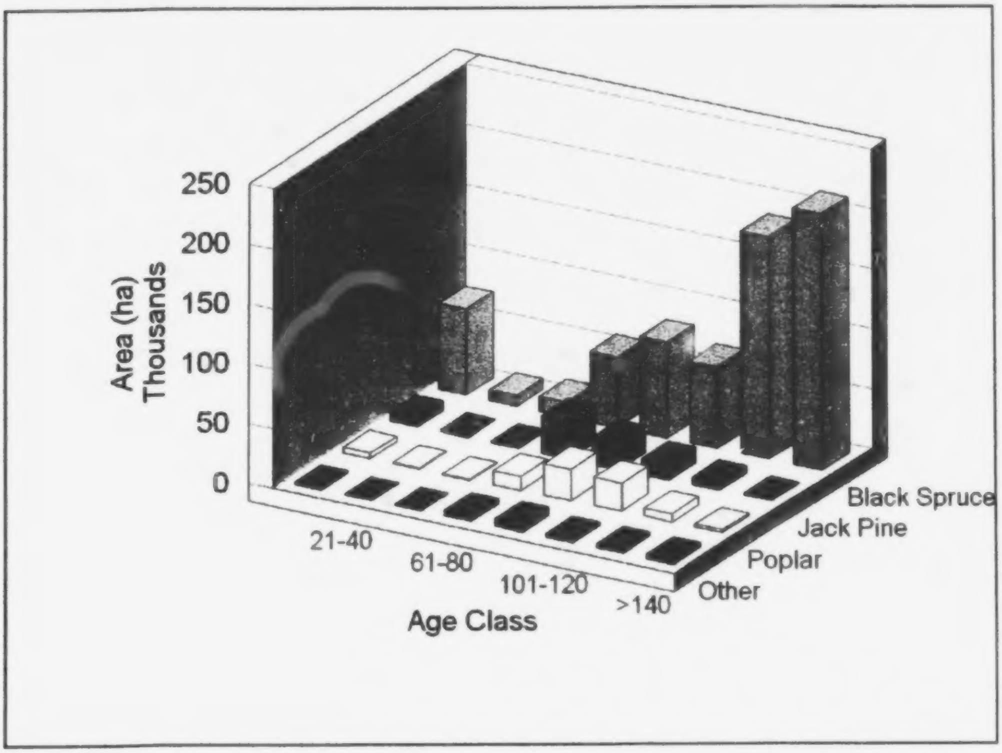

**Figure 2. Age Class Distribution of Crown Managed Productive Forest by Major Species Class** (Source 2003 Ogoki FMP, Table FMP-2)

There have been a number of recent large-scale disturbances, some of which are not reflected in Figure 2. In October 2001, a large portion of the Forest was covered with heavy wet snow, followed by high winds. The result was that large areas of the Forest were damaged either by blowdown of trees, or because the tops of many trees were broken off. This event led to high levels of salvage harvesting from 2001 to 2005, and because much of the Forest is not accessed by road, many damaged areas were not salvaged. In June 2005, a fire burned approximately 13,600 ha in the southern part of the Forest – neither this event nor the impact of the heavy snowfall are reflected in Figure 2. Figure 2 does include the impacts of extensive forest fires in the early 1970's, the late 1980's, and the 1996-97 period.

The Ogoki Forest is also notable because it supports woodland caribou, and this means that forest management is strongly influenced by the application of the caribou guidelines.[5] Woodland caribou are very sensitive to human disturbance and their range in Ontario has receded northward with the settlement of the province. Caribou once ranged south to Lake Nipissing, but are now restricted to much more northern forested parts of the province. The decline of caribou is likely due to a combination of factors including hunting, fire, land clearing, predation, and logging.[6] In northwestern Ontario, those forest management units which still contain populations of caribou are managed according to caribou guidelines. Key components of the guidelines include:

- management of forest landscapes on a very large spatial scale and a temporal scale spanning 100 years or more;
- management for the continuous provision of mature coniferous habitat in large (10,000 ha or greater) tracts;
- management of access roads so as to minimize impact on caribou habitat; and
- protection of calving areas.

One of the key principles underlying the caribou guidelines is that caribou need extensive tracts of old forest for winter habitat. The caribou guidelines note that "Habitat tracts in the 60 to 80 year range can be counted on to provide winter habitat and tracts greater than 80 years of age can be considered as prime habitat". In that regard, the Forest (Figure 2) is well-suited for caribou. Suffice it to say at this point in the report that woodland caribou are considered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to be "threatened", and the management response is very significant and involves attempting to provide a continuous supply of large contiguous blocks of mature conifer forest.

The Ogoki Forest also supports a large number of remote tourism lodges and outpost camps, with 24 registered operators. The MNR has recognized the importance of remote tourism by including a condition in the SFL requiring the Company and the remote tourism outfitters association to reach an agreement on conditions that would enable both to coexist. One of the measures that was put in place during the 1998-2003 plan period, and extended to the 2003-2008 plan period, was a restriction on motorized access into most parts of the Forest (motorized access is restricted on all main roads except the Gordon Creek Road, which runs west off the main road in the south end of the Forest). The Audit Team is not aware of other forest management units in Ontario which have such a large proportion of their area with restricted access[7]. This is a controversial measure, and was opposed by many local hunters and anglers, however the MNR District Manager felt that it was appropriate to retain this condition during the current plan period. The condition also supports the management of caribou.

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[5] Racey, G., A. Harris, L. Gerrish, E. Armstrong, J. McNicol, and J. Baker. 1999. (finalized 2001) Forest management guidelines for the conservation of woodland caribou: A landscape approach. MS Draft. Ontario Ministry of Natural Resources, Thunder Bay, ON.

[6] Darby, W.R., H.R. Timmermann, J.B. Snider, K.F. Abraham, R.A. Stefanski, C.A. Johnson. 1989. Woodland Caribou in Ontario. Background to a Policy. Ontario Ministry of Natural Resources. Queen's Printer for Ontario, Toronto.

[7] Land use plans in the Madawaska and Temagami areas contain access limitation conditions, and many other forest management units have restrictions on access applicable to specific roads or sections of roads.

### *2.2.3 Relevant management issues*

Several of the broader management issues that affect the Ogoki Forest, and create challenges for forest managers, are briefly described in this section – these issues re-appear in various places throughout the report, indicating that they are important issues with complex direct and indirect impacts.

**Impact of Snowdown Event**
As was mentioned above, a heavy snowfall on October 2001 followed by high winds led to widespread but variable damage across the Ogoki Forest. The damage caused by this weather event snapped the tops of trees in some areas, and led to blowdown in other areas. During the aerial inspection of the Forest, the auditors observed the damage and observed that it was extremely variable at a very fine grain.

Because much of the Forest is not yet accessible by road, many areas where there was a relatively high amount of damage and mortality cannot be salvaged. The stands that experienced the heaviest blowdown may renew themselves naturally to stands that have a more or less "normal" volume per hectare in the future, although the successional pathway taken will depend on factors such as the age and nature of the residual stand, advance regeneration, and seed sources.

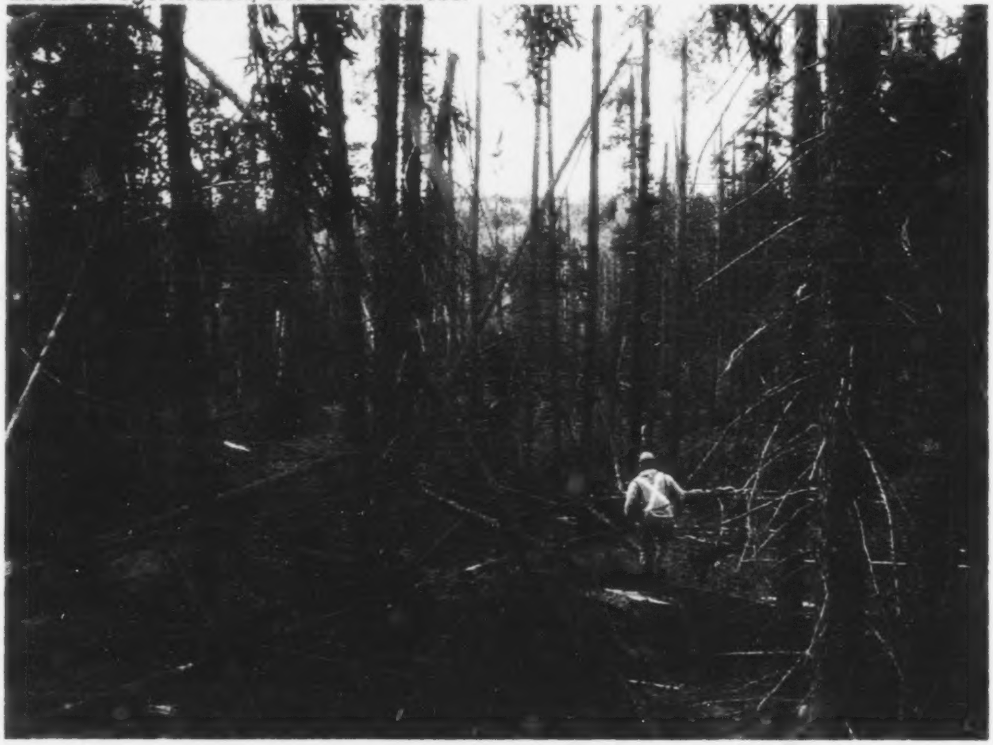

**Figure 3. An example of damage caused by the 2001 snowdown event.**

Other stands with patchy blowdown may become multi-aged stands as new growth fills in the gaps created by the storm. Stands that experienced a great deal of top damage may experience higher levels of cull originated from the break points and any future growth of the remaining trees may well create crooked trees with a low level of quality and value, especially in coniferous stands. Thus, the impacts of the snowdown event could impact the future harvest in a variety of ways. The major concern on the part of the Audit Team is that there is very little quantitative information on the extent of damage by forest unit, age class, or location in the Forest, and so it is not possible to do much more than guess at the future impact. This issue is discussed more fully in section 3.3.4.

**Converting natural forest to managed forest**
Large scale, continuous forest harvesting operations only commenced on the Ogoki Forest in 1998, and so what was similar to a natural forest in 1998 is gradually being converted to a "managed" or "working" forest. Due in part to fire suppression activities, the current forest has a high proportion of "old" stands, although in fact many of the lowland conifer stands may be more appropriately considered as multi-aged stands. Within 100 years, the Forest will be much younger than it is at present, with the average age declining from approximately 106 years to a future average age of about 50 years.

In determining what range of future forest conditions is acceptable, a forest projection model is used to simulate how the Forest would evolve over time in the absence of harvesting and with an average annual rate of fire loss equivalent to what is thought to have occurred in prior to the initiation of fire suppression and human industrial activity. In such a modelling exercise, the "natural" rate of fire loss is a critical variable, and it is one that is contentious – and this means that the application of simulated outcomes, such the minimum amount of mature and old forest that may occur under management, are also questionable and contentious.

In addition, the long-term result of management of the Forest will be a significant decline in the amount of "mature and old forest", and this will negatively impact species such as woodland caribou, which depend on mature and old coniferous forest for winter habitat. Because woodland caribou is listed as a threatened species, and is known to be sensitive to changes to the ecosystem, it is imperative that the best science be applied in a conservative manner so as to maximize the likelihood that caribou will continue to be viable on the Ogoki Forest. This issue, and related issue of conserving old forest, are discussed in more detail in section 3.3.6.

**First Nations**
Three First Nations that have an interest on the Forest have attempted to develop forest harvesting operations. They have, through companies or organizations controlled by the Bands themselves, been licensed to harvest timber on the Ogoki Forest through an Overlapping Licence (OL). The long-term performance of the three harvesting companies has not been especially good, due to a variety of difficulties related to various aspects of capacity. At the time of the site visit, none of these operations had been active for two years, the five-year agreement with a related management company (Three Nations Management Inc) had expired and had not been renewed, and all parties were at the stage where the overall approach needed to be re-thought. This is discussed more thoroughly in sections 3.2.3, 3.6.1 and 3.8.3 (First Nations consultation, harvest and licence obligations).

# 3 SUMMARY OF AUDIT FINDINGS

## 3.1 COMMITMENT

An assessment of commitment to sustainable forest management (SFM) is based on a review of relevant written statements (*e.g.* policy documents, legislation, regulations, *etc.*) and demonstrable actions of SFM (*e.g.* communication, planning, operations, monitoring, reporting, *etc.*). There are six procedures in the IFAPP to assess commitment of both the MNR as the regulatory agency and LLFP as holder of the SFL.

At the corporate level, both MNR and LLFP, through its parent company (Buchanan Forest Products Ltd.), have written statements that demonstrate a commitment to SFM, in the form of policy documents that have been approved by senior members of the respective organizations. In the case of MNR there are documents such as Our Sustainable Future – Ministry of Natural Resources Strategic Directions, the Policy Framework for Sustainable Forests, Beyond 2000, Ontario's Framework of Forest Policy and Authority and the legislation of the Crown Forest Sustainability Act. On the part of LLFP, there is an "Environmental Policy" and the "Environmental Management of Woodlands Operations". The 2003 FMP also acknowledges MNR policies and legislation and includes statements and planning activities that address SFM. Appendix 19 of the 2003 FMP is titled "Environmental Management of Woodlands Operations", and references some of Buchanan's environmental and management policies. The Audit Team feels that a fuller statement of BFP's commitments, and a reference to its environmental and vision statements, would have strengthened the Appendix.

MNR staff were knowledgeable of their corporate policies and legislation related to SFM. Public display or promotion of materials related to SFM in the form of corporate policies, public information pamphlets and posters was not, however, evident in the Geraldton Area office of the MNR. MNR staff said that when the entrance to the Area Office building was renovated and converted into a Government Information Center, they were required to remove display items such as maps.

**Suggestion # 1**

**The Geraldton MNR should display in the publicly accessible area of its office MNR's corporate policies related to SFM and make available documents that assist the public in understanding SFM, including documents that explain the role of the public in the SFM planning process.**

LLFP staff were aware of their policies and environmental management guidelines. The recent implementation of an ISO 14001 Environmental Management System (EMS) will ensure all LLFP staff and contractors are aware of SFM policies and legislation and the mechanisms by which these are implemented through the collective actions of individuals.

A commitment to SFM is verified through monitoring the implementation of the FMP. Monitoring confirms adherence to the approved practices of the FMP and determines the effectiveness of these practices in achieving desired SFM outcomes. Monitoring provides the critical step that initiates adaptive management actions in the pursuit of SFM. Ongoing monitoring is a part of the EMS and LLFP's "Corrective Action

Request/Preventive Action Request" reporting program; together these initiatives will contribute to ongoing improvement in current forest operations.

## 3.2 PUBLIC PARTICIPATION

### *3.2.1 Local Citizens Committee*

A Local Citizens Committee (LCC) for the Geraldton-Longlac-Nakina area was formed in February 1994 to assist with the development of the Geraldton Management Unit, Longlac Forest and Nakina Forest Management Plans. On February 7th, 2001, the LCC adopted an updated Terms of Reference (TOR) that is comprehensive in its statement of purpose, objectives, membership, administration and conflict resolution. Over the years the LCC has become involved in a wide range of resource management activities and has adopted the name "*Geraldton Area Natural Resource Advisory Committee*" (GANRAC) to better reflect its role.

Currently GANRAC has 17 members plus 14 alternates, providing excellent representation of 16 different interest groups. In addition, there is a recording secretary and MNR contact person. Over the audit period, regular monthly meetings were held from September to June and these meetings were very well attended and effective as noted by the regular presence of a quorum. Typical attendance ranged from 6 to 15 regular members, with 5 to 10 alternate members also in attendance.

Interviews with LCC members and a review of the minutes of meetings reveal many positive attributes of GANRAC that demonstrate an exceptional contribution to public participation in resource management. Some of these positive attributes include:

- the long service of GANRAC members;
- the high attendance record of LCC members and the regularity of monthly meetings;
- prior to the open houses associated with the development of the2003 FMP, GANRAC had a dry run of an open house and provided comment to MNR regarding the format;
- the active investment in the education of LCC members through special sessions, workshops and site visits;
- LLFP and MNR members come to meetings well prepared and they communicate information in a way that "*informs*" members;
- an LCC initiative that led to a Regional Joint Meeting of LCCs in 1999;
- the regular review of a wide range of topics related to sustainable ecosystem management both on and off the Ogoki Forest;
- the involvement of GANRAC in volunteer activities such as pulling the invasive plant purple loosestrife;
- GANRAC's initiation of "*Adopt a Landing*" program to resolve the problem of garbage left at informal lake landings located in the Geraldton area;
- the production of a newsletter "*The Forest Mosaic*" by GANRAC to inform the public about resource management issues;
- the publication of articles in the local newspaper, also intended to inform the public about resource management issues;
- the use of a paid facilitator to ensure GANRAC meetings are conducted in professional manner and that agenda items are dealt with effectively; and
- GANRAC maintains open positions and will always attempt to accommodate new

interested parties that may wish to participate.

**Best Practice # 1**

**The diverse membership and active participation of GANRAC in sustainable resource management provides a model for LCCs in Ontario.**

Despite the many positive attributes of the LCC that provided a best practice, IFA interviews with members and our review of LCC activities suggests there are still opportunities for improvement as follows:

- Due to the long distance of the Ogoki Forest from Geraldton, field visits are uncommon. The Company has offered GANRAC an opportunity to visit the Forest each year, and while GANRAC members endorse the idea, the net result is that a GANRAC visit did not take place during the audit period. It is suggested that to better enable GANRAC to understand and comment on relevant issues, periodic visits should be made to the Forest.
- The TOR for the LCC suggests forestry trade unions as an interest group area to be considered for membership. As this interest group represents workers that are directly involved in the implementation of SFM, it would be beneficial to ensure their representation on the LCC. To date, there is no representation from forestry union workers on the LCC. It is suggested that the LCC take appropriate steps to seek the inclusion of a forestry union worker as an LCC member.
- The LCC hosted a meeting in 1999 that brought together other LCC's in the District and two LCC groups from Thunder Bay District. The meeting allowed LCC members to share experiences and discuss problems. About two years ago, GANRAC again approached the MNR DM to request financial assistance in hosting a meeting among LCC's, similar to the 1999 meeting. It appears that limited funds have meant that MNR has not yet been able to meet this request. Based on our experience interviewing GANRAC members and other LCC's in Ontario, there is an enthusiasm expressed by LCC members who have participate in special sessions. Ideas are shared among LCC members that translate into renewed energy and validate their volunteer work directed at SFM. Given the many positive comments expressed by LCC members in regard to the hosting of special meetings, GANRAC should continue its current efforts to work with MNR to facilitate meetings that allow LCC's to exchange ideas and explore topics of interest and relevance.

**Suggestion # 2**

**The effectiveness of GANRAC may be improved through the following: visits to the Ogoki Forest by GANRAC members; inclusion of forestry trade union representation in the membership; and MNR working with GANRAC to facilitate meetings that would allow GANRAC to exchange ideas with other LCC's and explore topics of interest and relevance.**

### *3.2.2 FMP Standard Public Consultation Process*

The FMPM outlines the required timing and distribution of notices for each stage of the

FMP process. Supplementary Document I of the 2003 FMP provides a Public Consultation Summary that confirms notices were prepared and distributed to the public and First Nations in a timely fashion and through a range of appropriate local media types, including First Nations media. Written and verbal communications received as part of the FMP process have been documented, as well as responses to these.

### *3.2.3 Native People's Consultation*

For the audit period, MNR files show that consultation with First Nations has met requirements regarding notification and invitation to participate in the Forest Management Native Consultation Program during the 2003 FMP planning process. All three First Nations responded positively to the invitation to participate and did participate to varying degrees. A First Nations representative was a member of the 2003 FMP Planning Team. A Native Background Information Report has been prepared and Values Mapping was taken into consideration in the 2003 FMP planning process. Values Mapping continues to be updated for the Ogoki Forest utilizing a protocol developed by the three First Nations entitled "*Community Input and Education Protocol*".

Recently, it has come to light that the traditional use area of the Beardmore-based Animbiigoo Zaagi'igan Anishinaabek (AZA) First Nation includes the southern part of the Forest. Since the AZA historical interest became known, LLFP and MNR staff have treated AZA as an interested First Nation. The First Nation is interested in participating in forest management and planning activities; a representative recently joined GANRAC and AZA has also been given representation on the 2008 planning team. MNR is not required to offer AZA the option to participate in the Forest Management Native Consultation Program – the 2004 FMPM states that MNR is required to offer participation in the Forest Management Native Consultation Program to First Nations communities located in or adjacent to the management unit, and since Beardmore is located more than 100 km away, AZA does not meet the locational criterion. However, they do meet the second part of the FMPM criterion, which is that they have a traditional interest in part of the Ogoki Forest. The Audit Team feels that with a seat on the planning team, AZA will have a full opportunity to bring forward their values and perspectives during the development of the 2008 FMP, and that no further actions are currently required with respect to their status. Once the 2008 FMP is prepared, this may be a question for MNR to re-visit.

### *3.2.4 Annual Work Schedule Public Inspection*

The preparation of Annual Work Schedules (AWS) prior to the commencement of operations allows the public and First Nations an opportunity to review what activities will occur on the Ogoki Forest in the coming year. Information of particular interest to the public and First Nations includes renewal and tending operations that may provide local employment, the timing and location of slash pile burning, and the availability of public fuelwood, etc.

During the audit period, written notices of the availability of approved AWS for public review were issued at least 15 days prior to the commencement of scheduled operations each year.

## 3.3 FOREST MANAGEMENT PLANNING

### *3.3.1 Planning Team Activities*

The review of the planning process focused on the production of the 2003-2023 FMP for the Ogoki Forest. The Planning Terms of Reference (TOR) formalize the establishment of the planning team and contain a detailed schedule for plan production, review and approval. They were approved on February 27, 2001 with the required signatures of the Plan Author, District Manager (DM) and Regional Director (RD) on the signature page. They were not revised after this date as plan production proceeded on schedule and there was insignificant turnover of planning team and support team members.

Review of the planning team meeting minutes indicates that meetings were held regularly from December 2000 to May 2002. The minutes suggest that all members of the team participated in a meaningful way with a high degree of cooperation. Interviews with both of the planning team co-chairs verified that the planning team functioned well and provided good input to the plan author. Although a Steering Committee was established to deal with higher-level issues and disputes, its intervention was not necessary. The only shortcoming with respect to planning team activities was the absence of formal meetings after the second information centre, suggesting that subsequent planning team activities and decisions were not adequately documented.

**Suggestion # 3**

**The planning team for the 2008 FMP should develop mechanisms to ensure documentation of planning team activities and decisions in the absence of regular planning team meetings.**

There were 10 members on the planning team including 4 foresters, 1 forest analyst, 1 forest technician, 1 biologist, 1 remote tourism representative, 1 LCC member and 1 First Nation representative. They were supported by four support teams (i.e., LLFP, MNR District, MNR Region, and Native Values) as well as non-MNR advisors, in addition to the steering committee of senior LLFP and MNR staff that was never called on. Overall, there was sufficient representation of qualified professionals and stakeholders to address all FMPM planning requirements.

For the next FMP, however, LLFP staff indicated that Nakina Heritage Corporation, the most active Overlapping Licensee (OL), will have a place on the planning team as well as Longlac Wood Industries on behalf of the hardwood users. More effort will also be made to bring Armstrong-based outfitters to the table because of the proximity of new allocations to their remote tourism operations. It is also anticipated that the three local First Nations will nominate someone to represent their interests on the planning team.

Correspondence shows that both LLFP and MNR were receptive to meetings with the public and were proactive in seeking the opinions of major stakeholders. A number of informal meetings were held with stakeholders and members of the public, in addition to the normal public consultation requirements.

The methods used to communicate with the public were in accordance with FMPM (1996) requirements for the Public Consultation and Native Consultation Processes.

Both Community and First Nations Information Centres were held with reasonable levels of attendance. Good public summaries were available at the information centres. Of particular note were moderated presentations held at the First Information Centre on a number of contentious issues, with the moderator fielding questions from the crowd. Although these presentations were very well received, they were not repeated for the Second Information Centre due to the Ontario Public Service Employees Union (OPSEU) strike which prevented MNR from preparing and giving these presentations.

In addition, separate "dry-run" presentations were held in advance of the information centres. These were attended by the LCC, providing members with an opportunity to comment on the information centre format and content before the information centres were held. In this way, the majority of LCC members were at least familiar with information centre content even if they did not attend a subsequent information centre.

Although it is likely that the public information centres were well attended by members of the planning team, attendance sheets were incomplete or altogether missing for many of the information centres. Of the attendance sheets that were located, many lacked reference to dates and locations. It is also apparent that planning team and LCC members generally did not sign the sheets, making it impossible to determine whether or not they were present. As due diligence, the planning team for the 2008 FMP should ensure that all planning team and LCC members sign the attendance sheets.

**Recommendation # 1**

**The planning team for the 2008 FMP should develop an effective mechanism to ensure that planning team and LCC members who attend information centres sign the attendance sheets or otherwise record their attendance.**

Review of MNR correspondence binders suggests that the planning team usually responded to public inquiries in a timely manner. However, the lack of a numbering system and grouping of correspondence under a few general classes in the binder made it difficult to locate specific correspondence cited in the spreadsheet summary. Evidence suggests that inadequate attention was given to the matter of tracking correspondence at planning team meetings. Thus, a better system to manage correspondence and ensure that it is easily retrievable should be implemented for the production of the next FMP.

**Recommendation # 2**

**The 2008 FMP planning team should develop a more structured system for documenting and tracking the receipt of comments and the provision of responses, and for reporting this information in an effective format.**

### *3.3.2 Resource Stewardship Agreements*

Resource Stewardship Agreements (RSAs) are made between an SFL-holder and a resource-based tourism licensee with business interests on the Forest – the intent is to facilitate the ability of two parties to negotiate solutions to contentious issues between them. RSA's are expected to be the mechanism of choice for dealing with access conflicts between individual remote tourism operators and forest companies.

The full requirements associated with the RSA process came into effect for 2004 FMPs – for 2003 FMPs, SFL-holders were required to make best reasonable efforts to initiate and follow the process for RSA development. The Audit Team finds that the Company did make a strong effort to engage in RSA development with tourism operators. In 2001, during the preparation of the 2003 FMP, the Company met individually with registered remote tourism outfitters and during these meetings, indicated the Company's willingness to begin to negotiate an RSA. The Company sent follow-up letters to the tourism operators with whom they met, documenting the invitation to negotiate an RSA. None of the remote tourism operators accepted the offer to negotiate an RSA during the preparation of the 2003 FMP – only recently have several operators approached the Company. As of the date of the audit site visit, there were no RSAs agreed upon and signed by the Company and any of the remote tourism operators on the Forest.

### 3.3.3 Sources of Direction

The FMPM requires that forest management plans pay heed to a variety of sources of strategic and planning direction, including:

- MNR's provincial goals, objectives and policies for natural resource management;
- Forest management guides (implementation manuals);
- Applicable regional- and district-level land use direction;
- MNR internal operational audits and independent audits of the management unit;
- Strategic business direction for forest-based businesses;
- The results of ongoing negotiations with Aboriginal peoples whose communities are situated in the management unit; and
- Licences regarding resource management on the Forest.

This audit showed adherence to all key elements of the sources of direction. Some of the issues discussed later (i.e. late submission and review of some annual reports, the need for revision of special licence conditions) are relevant to sources of direction, however, considered as a whole, the Audit Team is satisfied that relevant sources of direction have been followed.

### 3.3.4 Introduction

The Introduction section of the 2003 FMP contains the elements required by the FMPM, including an index to the environmental components of the Plan and a brief description of how MNR's Statement of Environmental Values under the Environmental Bill of Rights had been considered in plan development.

### 3.3.5 Management Unit Description

The Management Unit Description component of an FMP sets the stage for the strategic and technical aspects of the plan which follow. Although this portion of the plan is generally not lengthy or complex, its importance lies in that it is often reflective of the effort that the forest managers have devoted to gathering information about the forest and of their understanding of the forest. The section also provides readers with context upon which to understand the nature of the forest.

The 2003 FMP contained a description of the geology, soils and sites of the Ogoki Forest, in accordance with the requirements of the FMPM. A description of historical management activities on the Forest and its forest fire history was also provided. Of note is the fact that the plan recognizes uncertainty regarding the natural fire dynamics on the Forest. This topic is discussed in detail in Section 3.3.5.

The planning team did a good job of compiling the information required for the socio-economic profile. The 2003 FMP contains the required demographic profile information, prepared by MNR at Sault Ste. Marie. The forest use information includes a description of the remote tourism industry in terms of number of establishments, which is a good achievement, and also the status and employment impacts of local mills most dependent on wood from the Forest.

### Forest Resource Inventory

The Forest Resource Inventory (FRI) for the Ogoki Forest was derived by merging the FRIs from the former Nakina North and Ogoki Forests. Both inventories were based on photography undertaken in 1988, however the Ogoki inventory was not delivered until 2000 due to the lack of earlier operations on the Forest. In preparation for the 2003 FMP, both inventories were updated to account for actual depletions up to 2001. Recently burned areas were also updated in the FRI to April 2000 using satellite imagery to define their boundaries, and MNR fire records to establish the year of disturbance. During the mapping process some blowdown areas were also identified and mapped using the satellite imagery. The Company also initiated a study to assess the feasibility of re-classifying the natural depletion areas into forest units using higher resolution satellite imagery, but this was not completed prior to preparation of the 2003 FMP. Finally, areas allocated for harvest up to 2003 were also simulated as depletions.

The 2003 FMP reports that the total Crown managed production forest area for the Ogoki Forest is 746,506 ha. Of this total, 9,584 ha, or 1.3%, is in the Barren & Scattered category, while an additional area of 72,316 ha, or 9.7%, is in the depleted category. A large part of the depleted stands represent areas that were burned by wildfires following the acquisition of the photography in 1988. The remainder of the area consists of harvest depletions and areas depleted by windthrow.

### Snowdown Event

On October 24, 2001, a snowstorm followed by strong winds affected an area from Sioux Lookout in the west, south to Lake Nipigon, east to the community of Marten Falls and north to the border of the Area of the Undertaking. Within a short period of time, approximately three to four feet of wet snow and ice covered the Ogoki and Nakina North Forests and accumulated on the canopies and crowns of the coniferous trees throughout the Forest. Winds followed the snow and ice storm, resulting in areas of windthrown trees and snapped treetops.

LLFP, in cooperation with the Geraldton Area MNR, conducted several reconnaissance flights in November 2001 to assess the damage and extent of the storm. The survey confirmed that the damage varied in intensity throughout the Forest and no concentration of damage occurred in any particular area. Due to the extent of the damage, a further assessment was conducted in the spring/summer of 2002. The approach used, which was sampling on a 10 km x 10 km grid, was too coarse to provide much useful information. The map that resulted from this effort indicated that almost the whole of the Ogoki Forest was severely impacted, with more severe impacts centered on

Kagianagami Lake and including the majority of the former Nakina North Forest. The results from this survey were not designed to provide any indication of the impact on growing stock, stand stocking, or on the potential future development of stands with moderate to light damage (especially broken tops in coniferous stands).

At the time of writing, the impacts of the snowdown damage had not been incorporated into the FRI or growth and yield curves, which leaves the Company with considerable uncertainty regarding where it is most appropriate to allocate stands for harvest in the rest of the plan period, and perhaps subsequently. It is not clear how future harvesting will proceed in the damaged areas; MNR has stated that it will not offer salvage rates on snowdown damaged timber after the allocations in the 2005-06 AWS have been harvested, since MNR feels that any timber that would have qualified for salvage rates would be too rotten to be usable. Nevertheless, stands that experienced either top damage or a reduced stocking due to windfall may be harvest candidates in the short and medium term if their future development might be impaired by the damage they have received.

The Audit Team feels that it is important for the Company to get a better understanding of the snowdown damage and its effect on present yields and future stand development, to improve the basis for scheduling stands for harvest and understand the impact on other forest values. One approach that the Company should consider is to operationally cruise a sample of the stands that come under consideration for harvest during the 2008 plan period. Operational cruising would not only assist with the estimation of present volumes, but it would provide some broader insight into the extent of damage on the forest. It could also be organized to contribute to block layout and access planning.

In addition to assessing the growth and yield impacts, the area affected by snowdown damage will need to be incorporated into the FRI for the preparation of the 2008 FMP. The Forest Information Manual (FIM) states that the SFL-holder "must prepare updated forest stand descriptions for all productive areas on Crown lands under licence" in accordance with standards described in FIM. Thus, according to FIM, the Company has primary responsibility for updating the inventory to account for the snowdown damage.

In early November 2005, the MNR re-assumed responsibility for the preparation of forest resource inventories and there have been a number of subsequent, related announcements. At present, there is some uncertainty as to how this will proceed. This change of responsibility does, however, shift some of the responsibility for gaining an understanding of the snowdown impacts onto the MNR, although it is clear that the Company must also participate in this effort.

There is also the potential for the impacts of the snowdown to affect the extent or quality of caribou habitat. There is the potential for all three levels of MNR (District, Region and Corporate) to be involved, since District MNR has the responsibility for ensuring the delivery of wildlife objectives and Regional and Corporate MNR are in a position to provide science- and policy-based perspectives on potential caribou habitat suitability impacts. It may be that areas of extensive damage are candidates for inclusion in currently accessible blocks. It may also be that damaged stands do not make good caribou habitat because they are too difficult to move through, or are too open. As a result of these factors, it may be beneficial to modify the caribou mosaic to better account for forest condition. Again, with little information, it is not possible to make an informed assessment.

**Recommendation # 3**

**Corporate and Regional MNR and the Company should assess the impact of the snowdown event on the forest inventory, future growth and yield of damaged stands, and caribou habitat capability. It would be desirable if this was a region-wide study, led by MNR and involving the Companies holding SFLs on affected forest management areas.**

Recommendation # 3 should be undertaken expeditiously so that the results (at least preliminary ones) can be incorporated into the 2008 FMP. Given the regional extent of the damage, the Audit Team feels that it would be best if such an effort could also cover other forest management units that have been affected. It would be appropriate for both Corporate MNR (Forest Resources Inventory Program) and Regional MNR to be involved in such a study.

The auditors are concerned that the quality of the inventory will not be adequate for operational planning, especially in the latter years of the 2008 FMP. The snowdown event contributes to this concern. We note that there was an objective in the 2003 FMP to "assess the impact on the forecast yield curves volume projections as a result of this storm", but as of the date of the site visit, the Company has not made much progress on this. The Audit Team also notes that in combination with harvest areas and the areas of fire depletions referred to above, the area of the Forest in "undescribed" categories (except for year of disturbance) will exceed 10% of the productive forest land base.

The 2008 FMP prepared for the Ogoki Forest will be the first 10-year plan for the Forest written under the new FMPM. In 2008, the FRI for the Forest will be 20 years old, and it will reach 25 years of age in the middle of the 10-year term. The FIM requires that the inventory used at the beginning of planning be no older than 20 years, and so fairly soon Corporate MNR, as well as the Company, will need to start thinking about the preparation of a new inventory.

Since the normal cycle for preparation of an updated inventory, from imagery to automation, is three years, there is insufficient time to complete a new FRI in time for the preparation of the 2008 FMP. However, there are other options that may be explored, such as a partial update of the 20-year planned depletion area, and/or a partial update of the areas affected by natural disturbances (snowdown and fire). In the 2004 FMPM, the year three annual report requires an assessment of the FRI. If at that time the updated inventory is shown to be substantially different from the inventory used in plan preparation, then there is an option to begin a new 10-year FMP at the midpoint (5 years) of the 2008 FMP. The following recommendation is directed at MNR, in the belief that the recent revisions to inventory responsibility will place the onus on the Corporate level of MNR to plan for the update of the Ogoki FRI.

**Recommendation # 4**

**Corporate MNR and the Company should develop a strategy for FRI update for the Ogoki Forest by March 31, 2006. The strategy should address the completion of updates to the fire and snowdown disturbances on the Forest, as well as updating stand descriptions of the remaining forested area; and should include a schedule for implementation that takes into account the implications of the 10-year planning cycle, and meeting the FIM requirement for age of inventory.**

### Wildlife

In the 2003 FMP, the portion of text devoted to wildlife does not completely follow the direction of the FMPM, which notes "At a minimum, the contribution from, and importance of, the management unit in providing provincially and locally featured wildlife species, as well as rare, vulnerable, threatened and endangered wildlife species must be provided. In addition, species for which preferred habitat is declining or lower than expected on a regional basis should be identified …". Although the plan provides descriptions of habitat for moose, caribou, and marten – all featured species in the boreal forests of Ontario, no descriptions of other species which fit the requirements above were provided. Rare species occurring on the Forest include wolverine, great gray owl, and short-eared owl. (Although the plan includes a short description of great gray owls, the account provided does not meet the FMP requirements.) In addition, as documented in Table 12 of the FMP, there are several other species whose preferred habitat is projected to decline in the long term (over the 100-year period covered by the modelling exercise incorporated into the plan), and over the 20-year period covered by the strategic aspects of the plan. (There is no indication that the expected regional trends were examined.) The 2004 FMPM contains the same requirements for such descriptions, and so Recommendation # 5 is made.

**Recommendation # 5**

**The planning team for the 2008 FMP should ensure that that 2008-2018 FMP contains the required text related to wildlife in the Management Unit Description section of the Plan, and that table entries of wildlife habitat are correct.**

In addition, Table FMP-5 (Habitat for Selected Wildlife Species) contains errors in reporting the amount of regional habitat available for several species of wildlife relative to the provincial amounts. For example, the table reports that the northwest region contains 100% of the province's caribou winter habitat, 94% of the province's spruce grouse habitat and 90% of the province's white-throated sparrow's habitat. Clearly this table contains inaccuracies in reporting. We understand that these numbers are provided by the MNR Northwest Region, and the habitat supply models in use there are not the same as the models used elsewhere in the province. The plan should explain the reasons for the erroneous entries or delete them from the table. For FMPs produced under the 2004 FMPM, data on wildlife habitat availability will still be required, but provincial and regional entries will no longer form part of the wildlife habitat table (FMP-8). Nonetheless, Recommendation # 5 identifies the need for the subsequent plan to contain correct data related to wildlife habitat to ensure that the appropriate attention is paid to the habitat-related portions of the plan.

### *3.3.6 Objectives and Strategies/Management Alternatives*

The IFAPP directs the Audit Team to review the set of management objectives, targets and strategies developed for the 2003 FMP, and evaluate the selection and assessment of management alternatives considered in developing the selected plan direction. The objectives, strategies and management alternatives in the 1998 FMP were reviewed in the 2000 IFA.

### 3.3.6.1 Management Objectives and Strategies

The CFSA and the FMPM require forest management plans to contain objectives that address forest biodiversity, social and economic matters, silviculture, and the provision of forest cover for relevant values. The planning team for the 2003 FMP, with input from the LCC, developed a set of forest management objectives that spanned these four aspects. The objectives and associated targets are presented in Table 11 below, along with a preliminary assessment of the extent to which the objectives and targets are being met.

The objectives in the 2003 FMP were more specific, comprehensive and refined than those in the 1998 FMPs, and also reflected the operating experience of the Company during the 1998 plan period.

The Forest Management Guide for Natural Disturbance Pattern Emulation, released in 2001, was a major source of objectives for the FMP, even though the Guide was not mandatory for the 2003 FMPs. As the name suggests, the Guide discusses how the landscape patterns created by forest management activities can be made more compatible with those that might be found on a "natural" forest. Thus, the 2003 FMP contains objectives related to forest pattern at the landscape level. Wildlife habitat values are also affected by manipulation of forest cover, and there are objectives in the plan related to habitat provision.

The FMP is most notable for the objectives related to traditional land use, commercial tourism, and recreation – while many of the targets are requirements, there are some notable exceptions such as those related to traplines. It is also important to see these areas receive prominence in forest management objective-setting.

Many of the forest landscape pattern objectives, and associated wildlife habitat objectives, will be achieved through the implementation of the Forest Management Guidelines for the Conservation of Woodland Caribou – A Landscape Approach. The principle behind the guidelines is that winter habitat provided by large contiguous blocks of mature conifer-dominated stands is important to the maintenance of caribou. To implement the guidelines, the forest manager sub-divides the forest into large blocks of roughly equal-aged conifer-dominated forest. The blocking system is implemented for the most part on a 100-year cycle, which means that roughly 20% of the blocks are harvested in each twenty-year period. All of the merchantable material in an active block is to be harvested while the block is open, after which the block is closed and left for renewal until it becomes eligible for harvest again in 100 years or so. This approach lends itself well to a high degree of access control, which is also a key element in the management of caribou. Access control is also a key part of the strategy to maintain the quality of experience that the remote tourism operators are able to provide.

### 3.3.6.2 Management Alternatives

The forest management planning process requires the planning team to evaluate different approaches to managing the forest and select the one that best provides a suitable, sustainable outcome and meets plan objectives and targets. The 1996 FMPM stipulates that a benchmark, no-harvest scenario be modelled, as well as three specific alternatives:

- Maximum available harvest subject to available silvicultural trust fund amounts;
- Maximum available harvest with unlimited silvicultural spending; and
- Meet anticipated industrial demand with unlimited silvicultural funding.

Planning teams are urged to develop and investigate other management alternatives; in this case, the planning team developed one other alternative that was selected as the preferred alternative and formed a basis for the development of the FMP.

There were few changes in the data used to simulate the different management alternatives – all alternatives (except the benchmark, null run) were set up so that the caribou mosaic was used to allocate area for harvest. In the third mandatory alternative, and the selected management alternative, the conifer harvest target was set between 485,000 and 503,000 $m^3$/yr and a non-binding minimum hardwood harvest target of 104,000 $m^3$/yr was included – these volumes represent industrial demand. The selected alternative also resulted in the creation of a large number and area of reserves to meet various objectives, and harvest volume flow targets also varied between 10 and 20% per period among management alternatives.

The mandatory alternatives are intended to be benchmarks that allow the planning team to investigate the productive potential of the Forest, and the two alternatives based on unlimited silvicultural funding are infeasible. Sometimes, a planning team will select the option to harvest the maximum available harvest subject to available silvicultural funding, but this is rare. In most cases, as occurred in this situation, a management alternative is developed and modified so that plan objectives and targets are met, and that becomes the selected alternative.

### *3.3.7 Operational Planning*

#### Harvest

Harvest planning was consistent with the direction provided in the 1998 and 2003 FMPs, although it is noted that the necessity of conducting large-scale salvage operations from 2001 onwards meant that the Company had to make some adjustments to its allocations.

The nature of the caribou mosaic, in which large blocks are harvested over a 15 – 20 year time frame and then closed to harvest operations for 80 years or more, dictates that all merchantable timber (generally 50 years or older) in a block will be harvested during the period when the block is open. Within harvest areas, reserves, patches, peninsulas and in-block leave trees are not harvested to provide wildlife habitat elements and other values. The Company generally has five or six caribou blocks open at any one time, and harvest operations are active on perhaps 3-4 of these blocks at any time. The Company needs to balance road construction and maintenance costs with the risk that an unforeseen event may prevent access to a block and constrain wood flow from the unit.

The Company allocated the required amount of timber to the OLs on the unit but only Nakina Heritage Corp was able to harvest what was merchantable within the available allocation.

Where the Company introduced FMP amendments to permit salvage operations, the Audit Team is satisfied that the amendments kept to the intent of the FMP and the original allocations. Where possible, the Company conducted salvage operations in areas that had been allocated but not yet harvested and in contingency areas. Some salvage was undertaken outside existing allocations but adjacent to existing active caribou blocks, and this will lead to some minor revisions of the caribou mosaic in future plans, but maintains the integrity of the overall approach.

The caribou blocks are 10,000 – 25,000 ha in size and are used to partition the Forest to meet the intent of the caribou guidelines. Many companies organize their operations so that the tract of land on which an individual harvesting or silvicultural treatment is undertaken is tagged with an identifier. Usually, these individual treatment areas are no more than several hundred hectares in size, and these areas are often called blocks. To prevent confusion between these blocks and the caribou blocks, we shall refer to the treatment areas as operational blocks.

Compared to many companies, LLFP uses a different approach to identify its operational blocks – instead of one block comprising a discrete area on which a sequence of harvest and renewal is conducted, LLFP tends to accumulate operational areas in existing blocks. This means that a single block will expand over the course of a number of years and may comprise harvest operations conducted over many years. This has the outcome of yielding very large block sizes (greater than 1000 ha) which can create confusion when it comes to matching area-specific reports and data to the actual field location. Moreover, as further discussed in section 3.6.1, this short-circuits the compliance reporting process. The Audit Team felt that the system used by the Company to identify operational blocks was poorly suited to some of the management processes on the Forest.

### Silviculture

The Silvicultural Ground Rules (SGRs) contained in the 2003 FMP were consistent with the Silvicultural Guides that were in effect at the time. All the required elements were included and the preferred prescriptions for each forest unit are appropriate and are consistent with the selected management alternative. In general, the silviculture strategies in the 2003 FMP were thoughtful and well-described. There are no exceptions to the Silvicultural Guides listed in the FMP.

Forecasts for renewal and renewal support activities in the 2003 FMP are reasonable and are consistent with the selected management alternative. Renewal activities are planned for 28,119 ha, or 95% of the planned harvest area. The remaining 5% area consists of lands removed from production (roads and landings). There was no tending forecast in the 2003 FMP, since the area requiring tending was unknown at the time of plan preparation. The Company planned to conduct surveys to determine the need for tending prior to completing the planning aspects for the tending program. The SGRs do contain appropriate tending prescriptions for each forest unit that can be applied when necessary.

### Values Maps

Values maps present spatial information about point-specific values on the Forest. The maps are maintained by the Ministry of Natural Resources through its Natural Resource Values Information System (NRVIS). Company staff reported that, although NRVIS provided a reasonable benchmark of values for use in both FMP and Annual Work

Schedule planning, they have found the system updating process so lengthy, that NRVIS maps do not provide a consistently reliable reflection of the most current state of values on the Forest, which is needed for planning. Rather, Company staff maintain their own compendium of the location of point-specific values, gathered through consultation with district MNR staff, trappers and tourism operators, for planning purposes. NRVIS provides a basis for this compendium, but is not used as an authority for plan input. Values data gathered by the Company are provided to the MNR for updating NRVIS.

Although the Company's reliance upon its own additions to the NRVIS database is somewhat more accentuated than normal, the process for maintaining the most recent data for planning on the Forest seems to work reasonably well.

## Areas of Concern

The 2003 FMP included over 50 unique prescriptions for Areas of Concern. This reflects not only the qualities of the Forest, but in particular attention paid to attempting to provide adequate and tailored protection for tourism values. Some of the AOCs were group prescriptions, intended to be applied broadly to areas with common values. Examples of this type of AOC are portage and canoe trails, coldwater fisheries, and potential cultural heritage values. Many other AOCs were prepared for individual areas of concern, intended to be applied to unique circumstances. These types of AOC include tailored prescriptions for caribou calving areas and specific lakes with high tourism values.

## Access

As forest operations have only been conducted on the Ogoki Forest for the last seven years, more primary and secondary road construction is planned and undertaken there than in many other forests. The 2003 FMP identified four primary road corridors scheduled for construction. Documentation review and interviews with MNR and Company staff indicate that planning was undertaken in a manner consistent with the direction provided in the FMPM.

Discussions with Company staff, and a review of longer-term plans for accessing the forest satisfied the Audit Team that the long-term access strategy for the Forest is well-considered. One aspect of long-term access plans for the Forest is that access will be facilitated to the remote First Nations communities of Eabametoong (Fort Hope) and Marten Falls. Forest access roads will not go all the way to the communities, but they will push access considerably closer than it exists at present. The IFA requires that auditors consider whether the provision of access "may impact on" remote native communities. Both communities have expressed a desire to obtain all-year road access and view the development of roads to their communities as positive.

To safeguard the interests of tourism operators, a decision was made to maintain the access restrictions north of the Ogoki River. While not consistent with the desires of local recreationalists, the Ogoki Forest is so far north that the concerns of this community of users are more muted than in other, more southern forests.

Throughout the Forest, the Company is using temporary bridges as a means of controlling access. Once operations on the far side of the bridge are completed, the bridge is pulled. To alert forest users that access will be restricted after a designated date, signs are posted with a notice that the access is temporary and identifying the date on which the crossing will be removed. This strategy is an attempt to let users know that the provision of access is only temporary and avoid complaints when the crossings are removed. Concerns regarding the quality of some water crossing installations (discussed in Section 3.4.6) notwithstanding, the Audit Team applauds the Company's efforts to manage access on the Forest.

### Caribou

Woodland caribou are very sensitive to human disturbance and their range in Ontario has receded northward with the settlement of the province. Caribou once ranged south to Lake Nipissing, but are now restricted to much more northern forested parts of the province. The decline of caribou was likely due to a combination of factors including hunting, fire, land clearing, predation, and logging.[8] In northwestern Ontario, those forest management units which still contain populations of caribou are managed according to caribou guidelines[9], which provide direction on how broad forest areas should be managed so as to maintain their caribou populations. Key components of the guidelines include:

- management of forest landscapes on a very large spatial scale and a temporal scale spanning 100 years or more;
- management for the continuous provision of mature coniferous habitat in large (10,000 ha or greater) tracts;
- management of access roads so as to minimize impact on caribou habitat; and
- protection of calving areas.

As described above, management planning for the Ogoki Forest adhered to the caribou guidelines and took considerable effort on the part of Company and Ministry staff. One of the recommendations from the previous IFA was to review the rigidity with which the 100-year rotation schedule was being used in the application of the caribou mosaic. This review led to a number of modifications in the application of the caribou mosaic in the 2003 FMP, such as splitting and reducing the size of some of the harvest blocks, resulting in a stronger application of the guidelines than was used previously.

Another positive step in the application of the mosaic in the 2003 FMP has been the fact that the Ogoki mosaic has been linked to mosaics being used in the surrounding forests (Armstrong, Lake Nipigon, and Kenogami) to attempt to ensure consistency in the application of disturbance periods and provision of large blocks of habitat.

One area of caribou management with which the Audit Team has concern is the projected marked decline in caribou winter habitat. Table FMP-12 of the 2003 FMP shows that caribou winter habitat is projected to decline approximately 57% over the next 100 years from a present level of approximately 234,000 ha to approximately 101,000 ha by 2103. Although this decline is consistent with the projected trend in caribou habitat as simulated by the SFMM benchmark run, the Audit Team is concerned about the possible impact of such a decline on this species which is known to be sensitive and which is already recognized as a threatened species. The decline is largely a function of the Forest becoming regulated by the caribou mosaic, so that at any time, about 2-3 sets of blocks are suitable as caribou winter habitat. Implementation of the mosaic as intended, therefore, will inevitably result in this decline in caribou habitat. Furthermore, the projected decline in caribou winter habitat is consistent with the plan's target of maintaining "at least 40% of the known winter habitat tracts on the Forest at any point over the initial cycling of the caribou habitat mosaic".

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[8] Darby, W.R., H.R. Timmermann, J.B. Snider, K.F. Abraham, R.A. Stefanski, C.A. Johnson. 1989. Woodland Caribou in Ontario. Background to a Policy. Ontario Ministry of Natural Resources. Queen's Printer for Ontario, Toronto.

[9] Racey, G., A. Harris, L. Gerrish, E. Armstrong, J. McNicol, and J. Baker. 1999. (finalized 2001) Forest management guidelines for the conservation of woodland caribou: A landscape approach. MS Draft. Ontario Ministry of Natural Resources, Thunder Bay, ON.

The Company and the local MNR are clearly following the caribou management guidelines, and the approved FMP, and have made improvements to the management of caribou habitat compared to the previous plan. Nonetheless, the Audit Team remains concerned about the future of caribou on the Forest. The projected large decline in suitable habitat in combination with the imperilled status of the species is the source of this concern. The Audit Team is aware that the present guidelines represent the Ministry's good advice on management of caribou habitat. Furthermore, Ministry staff informed the Audit Team that a new Landscape Guide will provide revised (and presumably improved) guidance for the management of caribou. Nonetheless, given evidence that caribou are a sensitive species, and that their habitat is projected to decline markedly, the Audit Team believes the Ministry must provide strong objective evidence that the decline in habitat will not further endanger caribou and recommends that the Ministry conduct an objective assessment of the viability of the caribou population on the Forest, and that the results of the assessment be incorporated into subsequent forest management plans.

**Recommendation # 6**

**Corporate MNR should conduct an analysis of the long-term viability of the caribou population on the Ogoki Forest given the present and forecast management regimes. Subsequent planning teams should ensure that the results of the assessment are incorporated into subsequent forest management plans.**

## Old Forest and Natural Disturbance Cycles

As described earlier, a "benchmark" run of SFMM is carried out in which no forest harvesting is simulated and only natural disturbances are modelled. This benchmark run is used to identify what the state of the Forest would be in the absence of management to provide direction in setting some plan targets. A key parameter in the benchmark run is the natural fire return time. The natural fire return time can be thought of as how often one place on the Forest can be expected to burn in the absence of fire suppression. Estimates of fire return times for the Canadian boreal forest range from approximately 50 years to several hundred years, depending upon forest type and geographic and topographic locations.

For the Ogoki Forest, the natural fire cycles used were those suggested by the MNR for the Northeast region, rather than the Northwest region as it was felt that these better reflected the climatic and moisture conditions on the forest. One exception was that the return time used for the Spruce lowland site class 3 forest unit (a low productivity site class) was increased from 120 to 200 years to acknowledge the large areas of wetlands in this forest unit. The fire return times used on the Ogoki Forest for the eight forest units are shown in Table 4 below.

**Table 4. Fire return intervals used in the Ogoki Forest FMP.**

| Forest Unit | Return Time (yrs) | Forest Unit | Return Time (yrs) |
|---|---|---|---|
| Spruce lowland Site Class 1 | 120 | Mixed Conifer Site Class 1 | 70 |
| Spruce lowland Site Class 3 | 200 | Mixed Conifer Site Class 2 | 70 |
| Spruce Upland | 80 | Poplar Pure | 90 |
| Jack Pine Pure | 60 | Mixed Hardwood | 90 |

These estimates of fire return times are considerably shorter than rates suggested for the Ogoki Forest and Northeast region in recent MNR publications[10] [11], which identified natural fire cycles from 362 to 852 years. When short fire return times are modelled, relatively little old forest remains since most areas burn before they can become old. Longer fire return times result in more old forest. This is an important point for the Ogoki plan, as the targets for old forest are an important component of the forest's ecology for woodland caribou and several other wildlife species.

There is considerable uncertainty surrounding the natural fire return time on the Ogoki Forest, and there is not a concordance of opinion amongst qualified MNR staff on this topic. (The Audit Team interviewed several MNR scientists and experts on this topic.) The plan identifies that, although the Ogoki Forest was in the extensive fire zone (the area north of commercial forest management, where fire suppression occurs only when human habitation or infrastructure is threatened, but not to protect timber values) until the mid 1990's, fires were likely suppressed on the Forest to a greater extent than the designation of "extensive" fire zone normally engenders. If that is the case, then the natural fire return time reported in the MNR publications may be erroneous. Greater fire suppression would result in longer fire times, and so the natural fire return time may not be in the range of 362-852 years as suggested in the MNR publications. Furthermore, some MNR staff have identified problems with the data used in the publications (i.e. missing fires). This would similarly have the effect of producing estimates of longer fire return times. Other MNR experts believe that the fire return times used in the SFMM model are too short, based on the nature of the forest there, return times on similar forests in northeastern Ontario, and possible errors in the forest inventory.

Suffice it to say that there is uncertainty regarding the fire return times for the Forest and there is not agreement amongst MNR's own experts. This is not a criticism of MNR staff, as for any complex and evolving science it is reasonable to expect discordant opinions and findings. We understand from MNR regional staff that efforts will be made to provide updated advice and input into determining this key parameter in preparation for the next FMP. To endorse the necessity for providing this input, we have included the following recommendation:

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[10] Freche, R.J., J.A. Caputo, and K. McCulloch. 1999. Forest fire cycle analysis for applications in forest management. Ontario Ministry of Natural Resources AFFM Publication No. 362.

[11] Bridge, S.R.J. 2001. Spatial and Temporal Variations in the Fire Cycle across Ontario. NEST Technical Report TR-043.

**Recommendation # 7**

**Corporate/Regional MNR should provide updated direction regarding natural disturbance cycles to be used in the SFMM null run taking into account analyses of fire data and current scientific opinion.**

### *3.3.8 Plan Review and Approval*

Comparison of target dates in the TOR with actual milestone achievements reveals that timelines were generally met. There was a delay of approximately two weeks with the Notice of First Information Centre. This delay increased to nearly four weeks by the time of the second Information Centre, possibly a result of the MNR OPSEU strike. This delay essentially persisted until the submission of the revised plan (3 weeks late). However, the plan was ultimately approved one day ahead of schedule by the MNR.

These minor delays in the production schedule were necessary to ensure that sufficient notice was provided for Information Centres and that enough time was provided for plan review and approval as required by the FMPM. The Terms of Reference indicate that all planning team members and advisors were essentially plan reviewers as well, which MNR encourages in order to promote the efficiency of the review.

#### Required Alterations

Interviews with the plan author, MNR co-chair and MNR Regional reviewers suggest that required alterations were reasonable and well incorporated into the plan.

Term and Condition 62.(b)(ii) of the *Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario* states that required alterations and the reasons required for the alterations relating to the manipulation of forest cover shall be certified by a Registered Professional Forester. This requirement is also contained in the FMPM (1996) and was reaffirmed more recently in Section 4(b) of Declaration Order MNR-71 and the FMPM (2004).

Though required alterations were not technically certified, the MNR co-chair fulfilled the intent of this requirement by compiling MNR required alterations/comments and spending some time reviewing them to ensure they were reasonable and consistent with MNR policy direction. Nevertheless, in future MNR should ensure that the Terms of Reference for the 2008 FMP formally assign responsibility to an MNR RPF for the certification of required alterations related to the manipulation of forest cover.

**Recommendation # 8**

**The MNR should take measures to ensure that required alterations relating to the manipulation of forest cover are certified by an R.P.F.**

### *3.3.9 Plan Amendments*

The Ogoki Forest 1998 - 2003 FMP Amendment Summary indicates that there were 23 FMP amendments from April 1, 1998 to March 31, 2003. The Nakina North 1998 – 2003 FMP Amendment Summary lists 16 FMP amendments for the same five-year period.

This amounts to 39 amendments for the combined Ogoki and Nakina North Forests. However, 21 of these were approved during the first two years of the plans, before the audit period commenced, with the remaining 18 being approved within the first three years of this audit (i.e., the last three years of the previous plans, April 1, 2000 to March 31, 2003). Most of these amendments appear to have been made to accommodate relatively minor changes (e.g., changes in creek locations and values, FMP administration, etc.).

More recently, the Ogoki Forest 2003 - 2008 FMP Amendment Summary indicates that there have been 22 FMP amendments from April 1, 2003 to May 9, 2005. Of these, twenty have been classified as administrative and two as minor. The two minor amendments were made to add new salvage areas to the FMP. Of the administrative amendments, six were for tertiary/operational road corridors, five for primary and secondary/branch road corridors, five for water crossings and four for salvage harvest. Although these amendments may appear to have been made for a variety of reasons, most were associated with the identification of new salvage harvesting priorities. As such, both the frequency and rationale for FMP amendments appears to be reasonable.

Review of amendment request packages in both the LLFP and MNR offices confirms that documentation is generally complete. Although all contained the required requests, maps and tables, some lacked appropriate certification pages. For example, 1998-2003 Ogoki and Nakina North FMP amendments were submitted by the plan author but not officially certified. For 2003-2008 Ogoki FMP amendments, a proper certification form was developed but only used sporadically. In some instances, the RPF seal is only on the covering letter, other times it is entirely lacking. However, the most recent series of amendments have been properly prepared and certified in accordance with the FMPM. Accordingly, the Audit Team has every reason to believe that the Company will continue to properly certify all future FMP amendment requests.

Otherwise, all administrative amendments were approved by the MNR District Manager and all minor amendments were afforded the required opportunities for public consultation. Although MNR decisions on complicated amendment requests often exceeded fifteen days, the vast majority of amendment requests in 2004 and 2005 were processed in a timely manner.

On a more administrative note, different numbering systems used by MNR and LLFP have resulted in some degree of confusion and poor cross-referencing of amendment documentation. Some master lists were slightly out-of-date while the column used to cross-reference associated AWS revisions was rarely filled out. However, auditors verified that MNR and LLFP have already acted to harmonize their numbering systems by implementing a single numbering system for all FMP amendments and AWS revisions processed in the 2005-06 fiscal year.

The FMPM (1996) requires that MNR distribute copies of amendments to various locations specified within the FMPM (e.g., MNR Region, MNR Forest Management Branch, MOEE Regional Office and a location in Toronto provided by MNR). Though poorly documented, MNR does have a system in place to annually submit the year's amendments to the required locations. Photocopies of amendments are accumulated in a file and then packaged for delivery at the end of the year. Although it was possible to find one letter from the MNR Area Forester to the MNR NW Region citing delivery of amendments as well as an email message from MNR Forest Management Branch acknowledging receipt of amendments from 2003-04, no other documentation could be found to verify that amendments had been forwarded to the required locations in earlier years. A related recommendation is made in Section 3.5.2.

The IFAPP requires the auditors to examine whether the procedures related to salvage amendments were followed. In developing and processing a salvage amendment, time is often of the essence because the wood will deteriorate due to the onset of stain and insects. The 1996 FMPM states that when "an amendment is required to permit salvage operations as a result of a natural catastrophe, the MNR District Manager, in consultation with the Local Citizens Committee, will categorize the amendment to facilitate the expeditious planning and implementation of salvage operations to avoid waste of merchantable wood." (Page A-191).

As noted above, the snowdown event occurred as preparation for the 2003 FMP was getting underway, and it was not until mid to late 2002 that the results of the initial, coarse level assessment were available. As a result, there was not enough time to incorporate salvage operations directly into the plan. Instead, salvage harvesting was initiated through amendments.

During the 2003 FMP period, Amendments #1, #6 & #7 permitted salvage harvest operations. A series of separate amendments was submitted, rather than one large comprehensive amendment. This not only reflected the Company's step-by-step approach to assessing potential salvage areas but also facilitated speedy amendment approval – smaller amendments can be approved more quickly and are less likely to trigger major amendment requirements. Thus, one amendment would be to salvage stands in areas that were already allocated, and a subsequent amendment would be to permit salvage harvesting in adjoining unallocated areas.

### *3.3.10 Contingency Plans*

As there were only minor delays associated with production of the 2003 FMP, it was not necessary for the planning team to consider production of a contingency forest management plan. Ultimately, the 2003 FMP was approved one day ahead of schedule.

### *3.3.11 Annual Work Schedules*

Annual Work Schedules produced during the term of the audit were found to be consistent with the 2003 Ogoki FMP and meet the requirements of the FMPM (1996). Two years worth of harvesting area is generally scheduled in each AWS to permit some degree of operational flexibility and allow for unforeseen circumstances. This is prudent given the recent history of large catastrophic events (e.g., 2001 snowdown). Also, separate AWS-1, 2 & 3 tables have been produced for proposed salvage operations.

Harvest allocations are primarily for LLFP; however various Overlapping Licensees (OL) have been accommodated as required (i.e., Nakina Heritage Corporation, Aroland EDC, Eabametoong FDC, and Marten Falls FDC). Harvest stand listings are provided for the prime and overlapping licensees and operational blocks, while the annual schedule of wood utilization by licensee contains the required summary of scheduled harvest volume by species, product and volume type for each licensee. At the time of the audit, however, all OLs were inactive except for Nakina Heritage Corporation.

The FOPs contained in the AWS were consistent with the SGRs contained in each of the three FMPs which were in effect during the audit period. The Company had an agreement with the MNR forester to submit AWS revisions for inclusion of small silviculture areas as a package at end of each season. While the Company is technically not in compliance in these situations, this measure is a reasonable way of reducing the administrative workload of correcting minor mapping discrepancies and errors, such as slivers and similar small areas. However, in the latter years of the audit period, several larger silvicultural projects (500 ha or more) were undertaken without the prior submission of AWS revisions, which goes beyond the intent of the agreement.

**Recommendation # 9**

**The Company and MNR should submit AWS revisions for inclusion of silvicultural areas prior to undertaking operations on these sites.**

The majority of area scheduled for renewal, tending and protection operations includes area to be managed for natural regeneration through both CLAAG and clearcut harvest. A significant portion of area is also scheduled for artificial renewal, primarily through SIP and planting of jack pine and black spruce on the upland site types. No tending has yet been proposed during the audit term, which is not unreasonable given the short history of plantation establishment on the Ogoki Forest. However, forecasts for FTG surveys in the 2004-05 AWS include nearly 30,000 ha of backlog harvest area and nearly 3,000 ha scheduled for 3rd year surveys.

FMPM requirements for fire prevention and suppression are satisfied in the Buchanan Forest Products (BFP) Limited Fire Prevention and Preparedness Plan written for all BFP operations. This document was provided in draft format in 2004-05 with the initial AWS submission and in its approved form with the final AWS submission. However, the latter was subsequently removed from the approved AWS and never replaced. Similarly, the document was not included with the initial 2003-04 AWS submission although it was ultimately provided in its approved form with the final AWS submission.

Although the final document contains thorough woods modification guidelines as well as the required fire prevention and suppression plan components stipulated in the FMPM, the absence of portions or the entire document itself from initial AWS submissions left a number of FMPM requirements temporarily unsatisfied at the time of submission. For example, the draft document contained in the 2004-05 AWS did not identify LLFP operating area contacts or describe their potential fire roles. Nor did it include conditions for the use of Company equipment and personnel or the proposed means for transition from licensee fire fighting to MNR supervision.

Although the fire plan was ultimately updated with these missing sections, approved by MNR and distributed to all operational staff prior to the commencement of operations, the Company was unable to provide any record of approval dates or proof that the updated plan had ever been included in the approved AWS. To prevent this from occurring in the future, the Company should develop procedures to document the satisfaction of these requirements and ensure that the approved version of the AWS remains intact. A comprehensive document control recommendation is made in section 3.5.2 (Recommendation # 21); the situation to be addressed in Suggestion # 4 is only a part of the document control issues encountered during this audit. On another minor note, the description of the program for fire detection during periods of high fire danger is cursory for modified operations (e.g., a single reference to post-operational patrols of one-hour duration following operations) and entirely lacking for normal operations in recent fire plans.

**Suggestion # 4**

**LLFP should restore all approved AWS submissions to their original condition.**

**Suggestion # 5**

**LLFP may wish to consider devoting a section to fire detection strategies in future Fire Prevention and Preparedness Plans.**

Overall, the frequency of AWS revisions appears reasonable, with approximately eighty revisions made during the entire term of the audit and most recently, seventeen revisions in each of 2003-04 and 2004-05. Although an inordinate number of AWS revisions appear to have been made to accommodate adjustments to tertiary road corridors and/or water crossing locations (almost 40%), many of these were made to facilitate new salvage harvesting priorities and accommodate the operations of Overlapping Licensees. As such, both the frequency and rationale for AWS revisions appears to be reasonable. Overall, AWS revisions appear to have been approved in a timely manner by MNR.

However, revision summaries in the LLFP office appear to have been made after the fact to accommodate divergent company and MNR numbering systems. The summary for the 2001-2002 Nakina North AWS is missing entirely and it is difficult to tell exactly how many revisions there were since they were indistinctly labelled with only coloured pages between revisions. Also, AWS updates for the earlier part of the audit term (i.e., the last three years of the 1998-2003 FMPs for the Nakina North and Ogoki Forests) are not well maintained with many loose papers found in the front of the AWS binder. As a result it is very hard to follow revisions and track them back to associated FMP amendments. Although AWS revisions are relatively well organized in the MNR office, the numbering system employed is based on the numbers of pre-packaged tabs (e.g., repeating sequences of 1 to 10) rather than any sort of logical numbering sequence. Fortunately, LLFP and MNR have already taken action to harmonize the numbering system used for both FMP amendments and AWS revisions (see Section 3.3.7).

## 3.4 PLAN IMPLEMENTATION

### *3.4.1 Areas of Concern*

The IFAPP directs auditors to examine whether AOC protection measures were implemented as in the approved prescriptions, and that the prescriptions were appropriate for the specific site conditions.

Approximately 40 AOCs were inspected during the field portions of the audit. No problems were evident with the AOCs inspected. However, review of the FOCIS summaries revealed that MNR inspectors had identified several instances of non-compliance regarding operations inside AOC boundaries and failure to follow prescriptions in the AWS or FMP. Discussions with Company and MNR staff revealed that the Company's performance in ensuring the integrity of AOCs is maintained during operations has improved markedly in the last 18 months or so. Both Company and MNR staff attribute this improvement to two factors: 1) recently LLFP has engaged the services of a contractor to identify AOC and cut-block boundaries; previously this task was undertaken by on-site harvest foremen, whose other responsibilities often detracted from the time available to conduct high-quality boundary delineation, and 2) boundaries are now being identified using GPS (global positioning system) technology. Harvest machine operators who have GPS systems in their machines can download the spatial boundary information, "tie-into" the boundary locations, and keep the machine inside the harvest block This system has some advantages over the use of flagging tape which can be obscured, or inaccurately placed.

The Audit Team's review of the AOC prescriptions and of their application showed that the prescriptions were appropriate for the values they were intended to protect and that they were implemented well, with the exception of the since-corrected non-compliance situation discussed above.

### *3.4.2 Harvest*

Actual harvesting performance corresponded well to planned levels, especially for conifer. During the first four years of the audit period, which is the period of time for which actual harvest accomplishment data are available, the Company and overlapping licensees generally harvested at or slightly above planned levels, as shown below in Table 5. However, during the 2001/02 – 2003/04 period, there was a great deal of salvage harvesting undertaken, so that a comparison of the actual normal operations versus planned yields a low rate of achievement (See Figure 4). The majority of this salvage harvest was due to the snowdown event of October 24, 2001 that damaged forests in the region, as described above.

**Table 5. Planned and Actual Harvest Normal and Salvage Volumes (M m3/yr)**

| Period /Year | Conifer Volume (Mm3/yr) | Hardwood Volume (Mm3/yr) |
|---|---:|---:|
| ***Avg Planned (1998 FMP)***[1] | ***492*** | ***103*** |
| Actual 2000-01 | 458 | 44 |
| Actual 2001-02 | 471 | 21 |
| Actual 2002-03 | 443 | 60 |
| **Avg Actual (2000/01 – 02/03)** | **457** | **42** |
| ***Avg Planned (2003 FMP)*** | ***514*** | ***101*** |
| Actual 2003-04 | 495 | 45 |

(Source: Planned harvest volume is from the FMPs, Actual harvest volume from ARs).

1 Nakina North and unamalgamated Ogoki Forest combined.

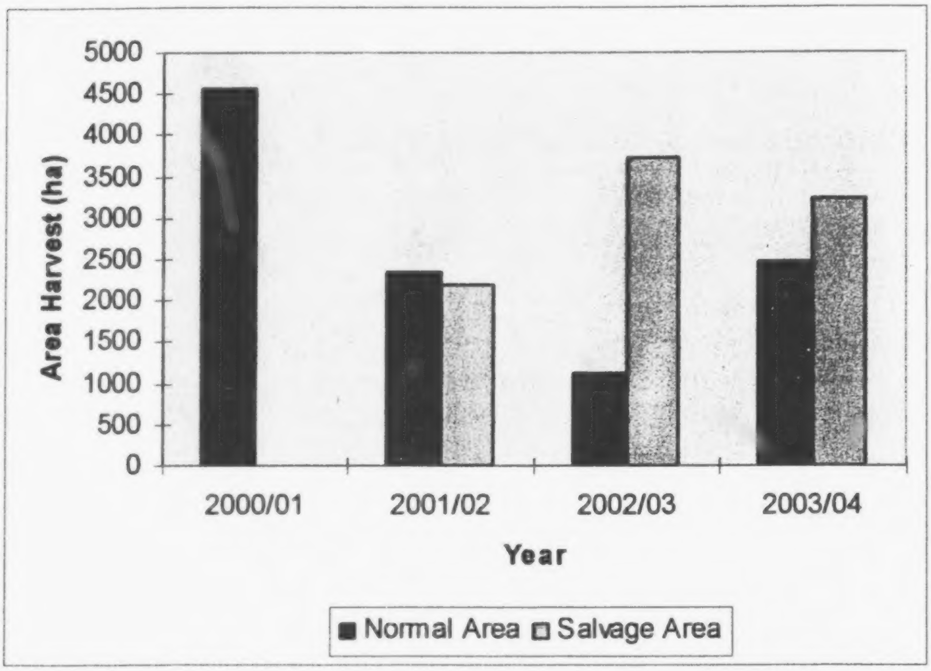

**Figure 4. Actual Annual Harvest Area, by Type of Harvest Operation.**

As shown in Table 5, the average actual conifer harvest was equivalent to 93% of the average planned level during the first three years of the audit period. However, actual conifer harvest during the entire 1998 FMP period was only 86% of the planned amount, as a total of 2.11 million m$^3$ of conifer was harvested compared to the planned level of 2.46 million m$^3$. The total actual harvest included 445,800 m$^3$ of conifer from salvage harvesting in 2001-02 and 2002-03, which is considered to be additional harvest brought on by the necessity of capturing the remaining commercial value of the damaged timber.

In contrast, hardwood timber is underutilized on this Forest, largely because many hardwood using mills in the region can source wood at a lower cost from other forests. During the first three years of the audit time frame, an average of 42,000 m$^3$ of hardwood was harvested each year, which was 41% of the planned level. The hardwood results are representative of the planned and actual poplar harvest. There was a zero planned harvest of white birch in the 1998 FMPs (and thus the planned hardwood harvest is actually the planned poplar harvest) and there was very little demand for it on this Forest during the plan period.

During the 1998 FMP period, the planned average annual harvest area was 4,644 ha. The actual normal harvest area averaged 2,905 ha/yr, or 63% of planned. In addition to normal operations, a total of 5,894 ha was harvested as salvage. When the salvage harvest is added to the normal harvest depletion area, the total depletion averaged 4,084 ha/yr, or 88% of planned. Almost 95% of the planned upland conifer forest unit area, and more than 100% of the hardwood forest unit area, was harvested during the 1998 FMP period. Roughly 84% of the planned productive black spruce lowland area was actually harvested, while approximately 77% of the low productivity black spruce lowland and productive mixedwood forest unit area was harvested.

During the audit period, the actual harvest volume from normal operations was 54% of planned, but when the salvage volume is also included, the actual harvest was 85% of planned. Similarly, the actual normal harvest area was 53% of planned but with salvage, the harvest area was 99% of planned.

The average yield per hectare of all timber species expected in the two 1998 FMPs was 128 $m^3$/ha and the actual yield on normal operations was close to planned, at 131 $m^3$/ha averaged on the former Nakina North and Ogoki Forests. Salvage harvests yielded an average of 75 $m^3$/ha during the 1998 FMP period and 92 $m^3$/ha during 2003/04, for an average of 81 $m^3$/ha during the audit period (See Figure 5).

In the 2003 FMP, the planned harvest area increased to an average of 5,920 ha/yr, and the planned volume averaged 615,170 $m^3$/yr, representing an average yield of 104 $m^3$/ha. In 2003-04, there was again a great deal of salvage, accounting for more than half of the total volume (55%) and area harvested (57%) that year. The comparison of actual versus planned normal operations is less than 50% for this reason, but the actual (normal plus salvage) harvest area was 96% of the planned normal harvest area, and 88% of the planned volume was attained. The overall average yield in 2003-04 was 94 $m^3$/ha. The lower planned yields in the 2003 FMP reflect revisions that the Company made to the yield curves, and an increase in harvesting less productive forest types.

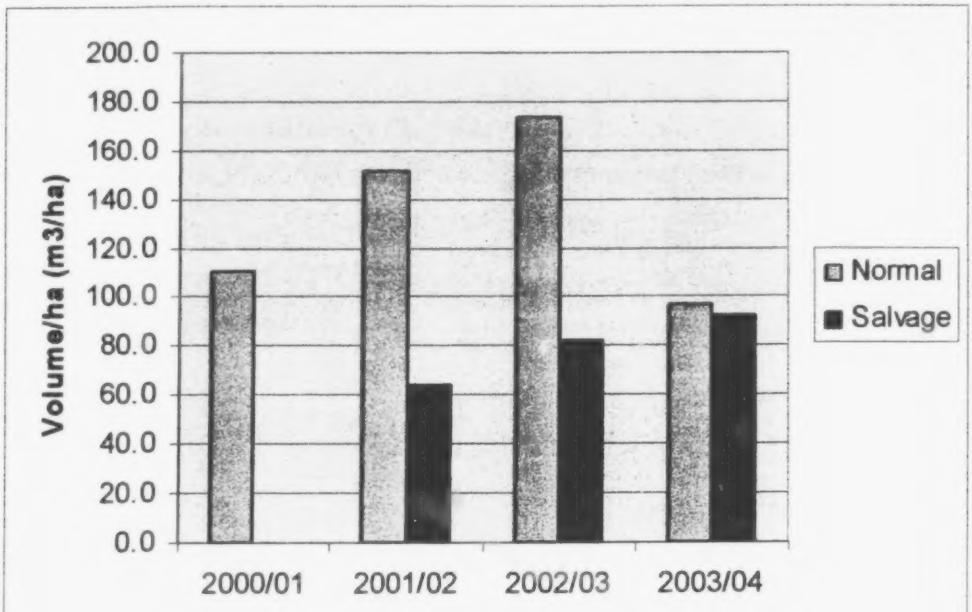

**Figure 5. Average Actual Harvest Volume per Hectare, for Normal and Salvage Operations.**

Primarily through contractors, LLFP harvests most of the wood on the SFL area. As described in section 3.8.3, the Company was required to allocate timber to four overlapping licence holders on the unit. This requirement reflected commitments made by LLFP during the bidding process that was held for the former Nakina North and Ogoki Forests. Of the four overlapping licensees, only NHC managed to harvest all of the available timber in its allocation with any level of consistency (See Table 6). Approximately 20% of NHC's allocations tended to not be harvested – due to non-merchantability of allocated stands (size or hardwood market issues) - and sometimes lack of access at the time when the stand is planned for harvesting.

**Table 6. Actual harvest volumes by the Overlapping Licence Holders.**

| Year | Nakina Heritage (m3) | Eabametoong (m3) | Marten Falls (m3) | Aroland (m3) | TOTAL (m3) |
|---|---|---|---|---|---|
| 2000/01 | 28197 | 0 | 8774 | 444 | 37415 |
| 2001/02 | 40247 | 38367 | 18537 | 5070 | 102221 |
| 2002/03 | 43502 | 24417 | 29577 | 0 | 97496 |
| 2003/04 | 40874 | 0 | 22655 | 967 | 64496 |
| Average | 38205 | 15696 | 19886 | 1620 | 75407 |

The harvest operations undertaken by LLFP and NHC were generally well done. Utilization of conifer improved since the previous audit, although hardwood utilization remains a problem. In the most recent year, the Company has begun to pile roadside slash using a boom attachment, rather than pushing it into piles. This produces more complete slash pile burns, as can be seen in Figure 6.

In the prior IFA, recommendation # 17 was aimed at improving operations on sensitive sites, including lowland sites on organic soils and very shallow sites over bedrock, especially related to minimizing soil disturbance (See Table 13 in section 3.8.5).

We observed a considerable improvement in the Company's performance in relation to the level of soils disturbance on the Ogoki Forest since the 2000 IFA. However, within several harvest blocks there were small areas where the levels of disturbance were high. These seemed to occur mainly in "inclusions" – small unmapped areas where the site conditions differed from the main stand description. Two situations were observed 1) small inclusions of very shallow soils on bedrock knobs (Ecosite 12), and 2) rich lowland sites (e.g., Ecosite 36) that occurred in drainageways, small, unmapped intermittent creeks, or areas with subsurface water flow. On the former the tree cover had been entirely removed (see Figure 7), and on the latter the majority of the site was covered in deep ruts.

There is a need for improvement in the implementation of harvesting when inclusions with sensitive soil conditions are encountered. Due to the small size and difficulty in mapping these areas, we believe that this is not an inventory or planning issue. A more effective solution is likely to be realized through the development of a procedure for dealing with these situations, and appropriate training of the harvest supervisor and equipment operators.

**Recommendation # 10**

**By January 31, 2006, the Company should develop a Standard Operating Procedure for harvesting practices on inclusions of areas with sensitive soil conditions within harvest allocations. By March 31, 2006, the necessary training should be provided to operations staff (especially equipment operators), and staff involved in compliance monitoring. Monitoring protocols should be adjusted if necessary.**

Similarly, the previous IFA made a recommendation to investigate potential uses for unmerchantable wood in the tops of conifer trees – there had been considerable volumes observed at roadside when low productivity lowland sites in particular were harvested. During the current audit, the Audit Team noticed a substantial improvement. This is because the Company now tops trees to a five-centimetre diameter and hauls tree-length in winter (when harvesting is concentrated on lowland sites). In summer, the Company hauls 8 – 16 foot lengths and generally continues to top at five centimetres. The tops are primarily used as hog fuel but the Company is considering the production of pulpwood chips in order to realize a higher return.

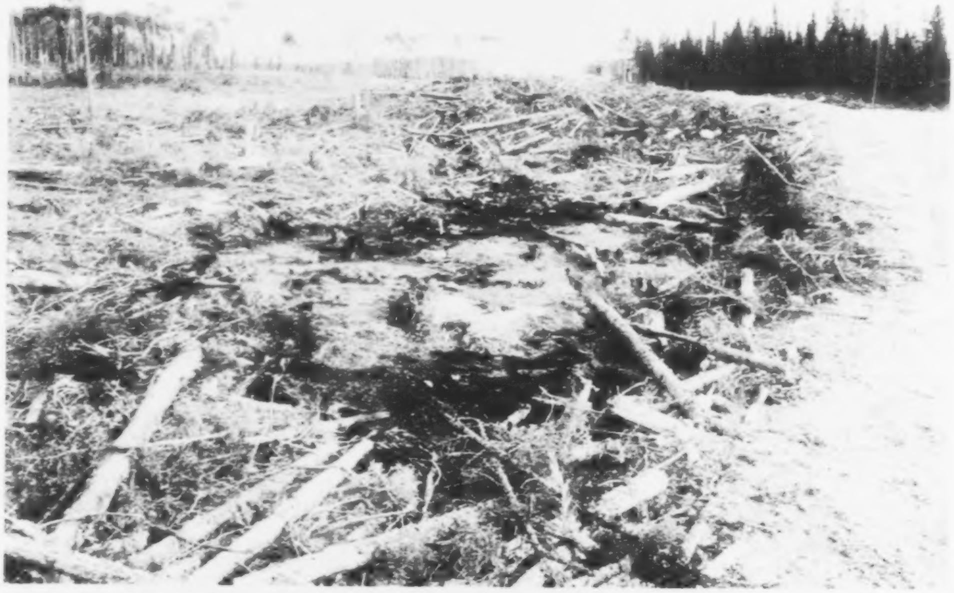

**Figure 6. An example of a successful slash pile burn.**

The Audit Team did notice that there were relatively numerous small piles of softwood logs, primarily pulpwood, that had been sitting at roadside for considerable time (See Figure 8). There was also a considerable volume of hardwood that had been cut and left at roadside; as with the conifer, some of this wood had been harvested relatively recently while other piles had evidently been there for several years or more. Not only is this potentially a waste of public resources but Crown dues have not been paid on most of this wood.

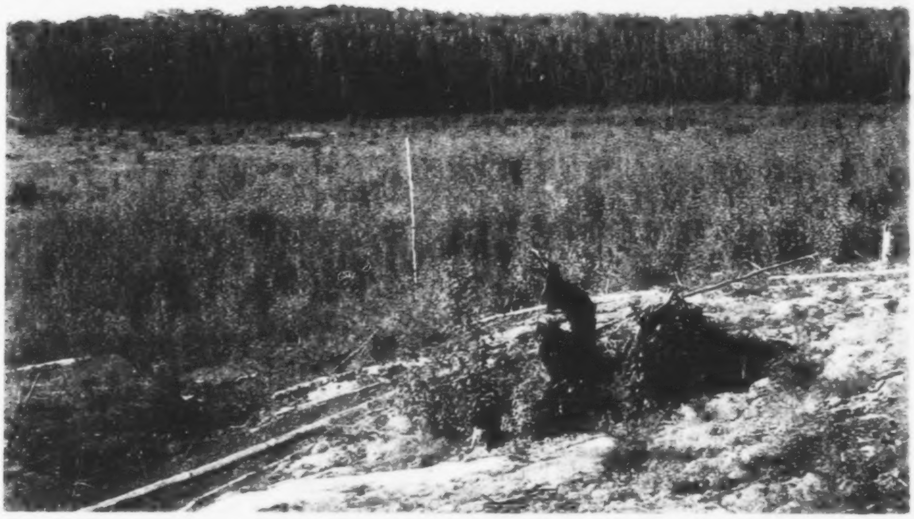

**Figure 7. An example where a rocky knob had been harvested, with poor renewal.**

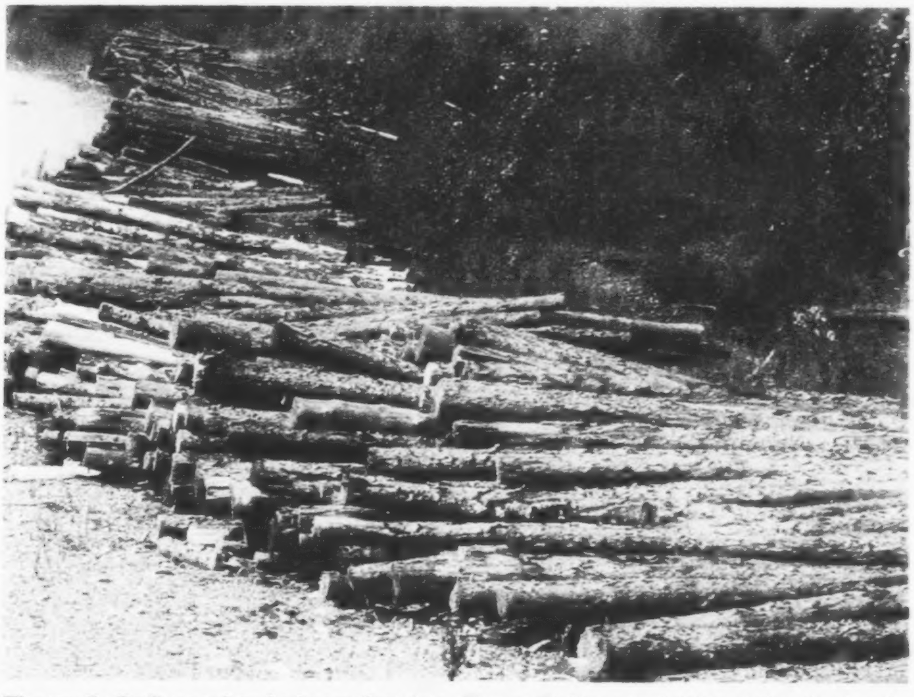

**Figure 8. Softwood pulp logs that have been at the roadside of the Aroland overlapping licence harvesting operation for an extended period of time.**

The logs generally fall into one of three categories:

- Softwood and hardwood logs harvested by overlapping licensees Aroland Economic Development Corporation (AEDC) and Marten Falls Forest Development Corporation (MFFDC) that have been sitting at roadside for two, three or more years;
- Softwood and hardwood logs that have been cut by LLFP contractors and were harvested more recently; and
- Hardwood logs that were cut by LLFP contractors two or more years ago.

The quality of the roadside wood that was harvested by these two OL's is deteriorating and the wood is not likely to be usable for much longer, if it hasn't already deteriorated past the point of merchantability. During the past two years, MNR staff have repeatedly asked the two OLs to haul this wood, and issued two compliance orders to MFFDC. The second compliance order was issued two months after the first, and was necessitated by wet weather which prevented any hauling from taking place. The second compliance order was not followed up because MFFDC, the company they were issued against, no longer existed. MNR also understood that the former MFFDC was re-organizing and the newly formed corporation (which never actually came to being) would take over the debts and problems of the old one. MNR feels (and this was confirmed in conversation with a Marten Falls representative) that Marten Falls is aware that if another corporation is formed by the community to harvest on the Ogoki, that corporation will be responsible for paying the outstanding arrears still owed to the Crown. The approach taken by MNR in this instance seems to have struck a reasonable balance between being supportive and also living up to their enforcement responsibilities.

Until very recently (October 2005) there had been no sign that a Marten Falls or Aroland company was going to haul the wood. But, in the fall of 2005, both Marten Falls and Aroland indicated that they would like to begin harvesting again and have recognized that they will need to the haul leftover wood as a condition of re-starting.

In the meantime, the wood at roadside is deteriorating and it would be desirable to have it used while it is still merchantable. MNR is empowered to seize unhauled wood, and usually the practice is to ask for tenders. On the OL areas, LLFP is the only logical user of the conifer logs, and so if this wood is seized, the tender process is unnecessary and further prolongs the delay in utilization. The Audit Team makes the following recommendation and suggestion, which are based on the following factors:

- AEDC and MFFDC have had fair and sufficient notice to haul the wood;
- in light of their recent interest, Aroland and Marten Falls should be provided with a date by which MNR will take action if they have not yet removed the wood;
- the wood should be hauled and used as soon as possible if it is still merchantable;
- the wood should be moved from roadside and disposed of if it is no longer merchantable; and
- it would be desirable to capture any outstanding Crown dues and renewal payments owed on the wood, if possible.

**Recommendation # 11**

**MNR should take necessary measures to ensure the removal of the harvested wood which has been left at roadside on the AEDC and MFFDC overlapping licence areas.**

**Suggestion # 6**

**If MNR decides to seize any of the roadside conifer wood on the AEDC or MFFDC overlapping licence areas, MNR should be able to offer it to LLFP without going through the RFP issuance process.**

The Audit Team also observed piles of softwood logs at roadside that had been cut by LLFP six months ago, or longer. The Company intends to haul and use this wood but the scattered distribution of it creates the potential that some piles will get missed if the Company relies on fortuitous opportunities to haul this wood. Crown dues are not paid on this wood until it is scaled at the mill and the Audit Team wishes to see the public obtain value for its resources.

There is also hardwood that has been harvested by the Company's contractors and left at roadside. The Audit Team is of the opinion that it is the responsibility of the Company, as the SFL-holder, to make appropriate efforts to see that this wood is utilized. Where the wood remains merchantable, the Audit Team feels that the Company should ensure that it is used. Crown dues have not been paid on some of this wood, and the Audit Team would like to see this remedied. Piles of unmerchantable wood by roadside should also be removed, because they are unsightly and will not decay quickly and show a lack of respect towards the resource. These piles may be chipped and scattered, burned, or moved and scattered over recent cutover.

The following recommendation is intended to ensure that these piles of roadside wood are removed, and used where possible, even though there may be a cost to the Company. The Audit Team recognizes that MNR and the Company may not agree on what wood remains merchantable, and feels that the Company is more likely to comply if it will not be required to haul wood that cannot be used or sold to other parties. However, all wood that is not hauled should be scaled and assessed for Crown charges, and the Company should dispose of it off the roadsides where it presently sits.

**Recommendation # 12**

**The Company should utilize all merchantable timber remaining at roadside that was harvested during the audit period, by it or its contractors, by September 30, 2006. Should this recommendation not be completed, MNR should scale the remaining wood and charge the Company. The Company should scale the wood by the roadside that it or its contractors harvested during the audit period but is now unmerchantable, pay applicable Crown charges, and remove it from roadside.**

The Audit Team would also like to prevent the recurrence of this situation, which is the result of a number of contributory factors, including the lack of block closure, as discussed in section 3.6.1. The piles of softwood would seem to primarily indicate an opportunity for the Company to improve planning the logistics of its operations.

**Recommendation # 13**

**The Company should plan its roadside operations so that all harvested wood can be removed efficiently within a reasonable time frame.**

The piles of hardwood at roadside are related to the difficulties in obtaining full hardwood utilization, which was identified as an issue in the previous IFA and continued to be low on the Ogoki Forest during the current audit period. The key concern is that the actual harvest of hardwood is much less than planned. There has been no real trend during the current audit period – the hardwood harvest was between 41 – 45,000 $m^3$/year in three of the four years for which there are data. These levels are well below the planned level, which was 102,500 $m^3$/year on the combined Nakina North and Ogoki Forests during the 1998 plan period. A spike in hardwood use occurred in 2002-03, when 121,000 $m^3$ was harvested.

While there is concern about hardwood availability in the region, clearly the issue on the Ogoki is not physical availability but cost. The implications of this situation are several:

- Mature poplar stands are by-passed that should be harvested, which undermines the principle behind the caribou mosaic;
- There is a loss of potential economic benefit and Crown revenue; and
- There are unintended implications for renewal, especially in mixedwood stands.

As described below in section 8, the Ogoki Forest SFL requires the Company to make all of the poplar volume available to Kimberly Clark Inc (now Neenah Papers) and Longlac Wood Industries (LWI), on a roughly 50:50 basis, with all poplar veneer going to LWI. The commitment also requires the Company to negotiate and sign a long-term memorandum of agreement with each of the two hardwood using companies.

Staff at both the Company and Neenah Papers described their relationship as good and mutually beneficial, and an MOA has been in place since 1998. The agreement covers both hardwoods and softwoods, and has enabled both companies to increase their mill utilization levels. In actuality, very little hardwood has gone to Neenah's mill from Ogoki (roughly 5,000 $m^3$/yr) but there is now much more conifer flowing from the Ogoki Forest to Neenah's mill, reaching 116,000 $m^3$ in 2003-04. (As LLFP pointed out, because their arrangement with Neenah provides a greater softwood volume for use at the Company's Nakina and Longlac mills, this situation is in keeping with the licence requirement for local processing of conifer.)

The Company's relationship with LWI is less fruitful, according to staff from the Company and from LWI. The issues between the companies extend beyond the Ogoki Forest and while they have not prevented a long term MOA from being negotiated, it has not yet been signed and is pending the resolution of other issues. LWI staff indicated that they are prepared to take any and all hardwood from the Ogoki Forest, and noted that it was only during the most recent year, 2003-04, that the hardwood volume provided to them from the Forest has approached the levels envisaged in the Ogoki SFL. This is borne out in the Annual Report data, which show that LWI received 45,000 $m^3$ of poplar in 2003-04, compared to volumes ranging from 5,000 to 37,000 $m^3$ during the previous three years. LLFP staff noted that relations between the two companies have improved somewhat in recent years, and the recently adopted practice of having LWI staff view and approve stands that they would like to have harvested on the Ogoki Forest has reduced the incidence of last-minute changes in delivery schedules that can leave LLFP with harvested poplar at roadside but no willing buyer (at an acceptable price).

The Audit Team feels that under the current relationship, LWI has the strategic upper hand because it can re-schedule or halt delivery of wood at no cost to itself, but at a potentially substantial cost to LLFP. These circumstances have led to a number of the poplar piles being left at roadside. On the other hand, the Audit Team suggests that as the primary licensee, LLFP is responsible for disposing of hardwood that has been harvested on the Forest. The previous audit contained a recommendation to try to deal with this situation, but the recommendation has not been followed for a number of reasons (See Table 13).

There have been several recent relevant developments:

- Neenah Papers closed its hardwood mill in May 2005 and is seeking to overhaul the mill, which may impact hardwood use;
- LWI is considering replacing its Longlac hardwood mill with a new OSB mill, to be built in Longlac; and
- BFP has been experimentally processing low grade poplar in its hardwood sawmill.

This does not seem to be a propitious time to consider measures to improve hardwood use; it is anticipated that as these developments proceed, the hardwood commitments will be reviewed. However, the Audit Team would like to see hardwood utilization improved and with this in mind, as well as the ineffective response to a similar recommendation in the previous IFA, the following suggestion is made.

**Suggestion # 7**

**The MNR should consider issuing a separate, short-term Forest Resource Licence for hardwood if, by year 3 of the current FMP, a substantial amount of allocated hardwood area is unlikely to be left unharvested during the plan period.**

To avoid having one of the hardwood users listed in Appendix E act strategically in order to obtain a hardwood FRL on the Ogoki Forest, MNR will need to consider the hardwood utilization history of those companies when it is making any short-term FRL decisions.

## Snag Trees

The Natural Disturbance Pattern Emulation Guide[12] (NDPEG) requires that in the implementation of 2003 and later FMPs, harvesting operations leave standing an average of 25 snags per ha. The snags are to consist of 6 large, living, potential cavity trees and 19 other trees of at least 10 cm dbh and 3 m in height. During the field inspection of recent harvest sites, the Audit Team developed an impression that performance in leaving snag trees on post-2003 harvest sites was generally uneven, and poor in places. Some sites had an abundance of snags, and some had very few. Very casual and unscientific enumeration of snags at some sites contributed to this impression. Company staff informed the Audit Team that some operators and contractors were better at leaving snags than others, and this was also borne out in our observations. In addition, both Company and MNR staff told the Audit Team that many, or even most snags blow over within a year of harvesting on the site. This may have contributed to our impression of poor-modest performance at leaving snags. Based on discussions with Company and MNR staff, the Audit Team is of the opinion that snag blowdown may be more of an issue on this Forest than on most others.

The Company has developed a snag survey protocol to examine whether sufficient snags are being left on site. The protocol is not yet implemented in a regimented manner, and is still undergoing some modifications, but at its core, it seems well-considered. Initial data from snag surveys show that, on average, almost 48 trees/ha are being left post-harvest. This is very different from the impression developed by the Audit Team and raises some questions:

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[12] Ministry of Natural Resources. 2001. Forest Management Guide for Natural Disturbance Pattern Emulation. Queen's Printer for Ontario. Toronto. 20 p.

- are surveys being conducted at random sites?
- is the blowdown problem so significant as to reduce even sites with abundant snags (which have been surveyed) to having very few or none?; and
- is the impression of the Audit Team inaccurate?

Unfortunately, because the present level of snag retention has only been in place for approximately two years, it seems premature to develop conclusions regarding this issue. The Audit Team believes that more information is required and so is making the following suggestion and recommendation:

**Suggestion # 8**

**The Company should continue implementing its snag survey protocol with the following additions/modifications:**

- **A method should be developed and implemented that ensures that the survey examines sites which are randomly selected within a cut block;**
- **Blown down snags should be recorded on the surveys; and**
- **Some sites should be re-visited to attempt to quantify the issue of snag blowdown.**

**Recommendation # 14**

**The Company should identify contractors and operators with poor snag retention performance and instruct them on how to improve their performance.**

Data from the modified snag surveys should provide answers to some of the issues. If snag blow down is verified to be an important issue, some steps could be taken to deal with the problem, such as: trees of windfirm species and sizes can be (more) favoured in snag selection, areas on the lee side of slopes can be preferred for snag retention, snags can be left in clumps more often; and experience of other areas with comparable issues can be pursued to see how others have dealt with the issue.

### *3.4.3 Renewal*

Overall, for the sites that were observed in the field during the audit, the silvicultural treatments were consistent with the silvicultural ground rules and forest operational prescriptions. The boundaries and coverage of site preparation, planting, and tending projects were good. With a few minor exceptions the areas were well-matched to the areas mapped and reported in the ARs. With a few minor exceptions the treatments were well-matched to actual site conditions and appeared to be effective in meeting the silvicultural objectives.

#### Natural Regeneration

No clearcut natural regeneration areas were reported during the audit period, so all field investigations of natural regeneration were conducted on CLAAG areas. Nonetheless, we did observe evidence of substantial natural ingress on many clearcut areas. Ingress of conifers was most apparent on the "pure" forest units, i.e. jack pine and black spruce. Good ingress of aspen from suckering was also observed on a number of hardwood sites. The Company's failure to report natural regeneration areas is further discussed in Section 3.4.6 and is addressed in Recommendation #18.

The CLAAG treatments we observed were an improvement over the CLAAG we saw in the field during the 2000 IFA. There was little or no rutting disturbance and the traffic control on the sites appeared to have been improved. In several instances we observed sites where there was little advance growth present following the CLAAG harvest. This seemed to be related to the condition of the pre-harvest stand rather than resulting from destruction of the advance growth during logging.

CLAAG treatments are meant to be applied to uneven-aged stands where abundant advance growth is present in the understory. The CLAAG treatments are prescribed by the Company based on the inventory of forest unit(s) within the area to be treated. Since pre-harvest surveys to evaluate CLAAG potential were not conducted on every candidate stand, some of the sites proved to be less well-suited to the treatment than anticipated. A significant number of the stands in the relevant forest units are of fire origin, appear to be even-aged, and have relatively high density. In these cases, and also with younger stands, development of the advance growth has been reduced or may not have had adequate time to develop through natural ingress. However, we did observe evidence of good natural ingress of black spruce on many CLAAG areas, and it is possible that the density of regeneration will develop adequately on most CLAAG areas over a period of time. Given the importance of this treatment in the overall renewal program (in the 2003 FMP, CLAAG represents approximately 21% of the total planned renewal), the auditors believe that some fine-tuning of the CLAAG treatment is in order to ensure that the success rate is optimized.

**Recommendation # 15**

**The Company should develop better definitions of the characteristics of stands suitable for CLAAG treatments for inclusion in pre-harvest inspections and conduct the appropriate staff training. LLFP should also consider means of leaving more residual trees on sites with lower pre-harvest levels of advance growth, to serve as an additional seed source for natural ingress.**

## Site Preparation

Generally the choices of site preparation treatments were appropriate for the site conditions, and the coverage and quality of the treatments was good. During the audit period, most of the site preparation was conducted with Bracke implements, with some experimentation with powered and passive trenching equipment.

We observed two sites in the field that had much debris due to blowdown and/or overmature condition. The debris and the thicker duff layers in overmature stands contribute to difficult conditions for light mechanical SIP equipment, resulting in poor coverage and fewer planting chances. The density of planted trees will be lower in these situations. Richer mixedwood sites will also be more competitive for conifers which may have the effect of further reducing stocking and growth.

**Suggestion # 9**

**The Company should determine the feasibility of different options for site preparation in overmature or windthrown mixedwood stands, such as "light" blading, winter shearblade, and powered trenchers. Prescribed burning may also provide an alternative for site preparation on these areas. LLFP may also wish to consider more use of white spruce planting, and techniques such as underplanting, in combination with spot herbicide applications or manual release.**

#### Tree Planting

Species choices for tree planting were generally well-matched to the observed site conditions. LLFP has also done a good job of directing species within planting projects to site-specific terrain. As seen in Table 7, the Company planted over 10 million trees on the Ogoki, Nakina North, and combined Forest during the audit period. The relative proportions of jack pine, black spruce, and white spruce are appropriate for the forest units on the harvested area and are consistent with FMP objectives.

**Table 7. Trees planted (thousands) by LLFP on the Ogoki, Nakina North, and combined Forests for the four years (2000-2003) of the audit period for which data is available.**

| Forest Unit | Year | Sb | Sw | Pj | Total |
|---|---|---|---|---|---|
| Nakina North | 2000 | 0 | 0 | 0 | 0.0 |
| | 2001 | 986.6 | 194.9 | 217.3 | 1,398.8 |
| | 2002 | 634.5 | 255.3 | 57.1 | 946.9 |
| Ogoki (unamalgamated) | 2000 | 0 | 0 | 0 | 0 |
| | 2001 | 2,271.7 | 124.9 | 563.9 | 2,960.6 |
| | 2002 | 1,708.0 | 62.0 | 213.0 | 1,983.0 |
| ***Subtotal 2000-2002*** | | ***5,600.8*** | ***637.1*** | ***1,051.3*** | ***7,289.3*** |
| Ogoki (Amalgamated) | 2003 | 2,418.8 | 306.2 | 633.9 | 3,358.9 |
| ***Total*** | | **8,019.6** | **943.3** | **1,685.2** | **10,648.2** |

#### Seeding

Generally, the seeding treatments we observed in the field were of excellent quality. Density and survival of the seeded stock was good in all cases. The Bracke seeder provides better control of the spacing of the regeneration than aerial seeding, and in our opinion, many of the sites treated in this manner will not require thinning treatments. As the Company moves to aerial seeding in the future, the need for thinning of seeded sites will have to be re-evaluated.

### *3.4.4 Tending and Protection*

No tending operations were planned or undertaken during the audit period, reflecting the short time of full-scale operations on the Forest as well as the Company's reticence to use chemical application to control competition. However, several of the planted and seeded sites we observed in the field had high levels of competing vegetation, and will in our opinion require tending within the 2003-2008 FMP period to ensure the survival and growth of the conifer regeneration. The results of LLFP's 3-year assessments, and other aspects of the silvicultural monitoring program, which include an evaluation of competition levels to conifers, should be able to provide an estimate of the area requiring tending on an annual basis.

**Recommendation # 16**

**The Company should analyse relevant information to estimate the area in need of tending, and develop an appropriate tending program for implementation within the current FMP period.**

Minimizing the use of herbicides is an objective in the 2003 FMP. One reason for this is the nature of the public interests on the Forest, and opposition to their use by local First Nation communities. Both the Company and the MNR are sensitive to these concerns, and this is likely a factor in the delays in planning for and implementing tending treatments. However, other wood supply-related objectives in the FMP call for the maximization of sawlog potential on intensively treated conifer areas, and on the high-competition sites this will be difficult to achieve without tending.

**Suggestion # 10**

**The Company and MNR should consider developing and implementing a small-scale tending program initially, possibly with the involvement of representatives from the First Nations, on a non-contentious, carefully controlled site.**

This initial "trial" program might help to assemble local information regarding the growth and yield benefits of tending and also serve an educational purpose.

### *3.4.5 Renewal Support*

The Company has a good program for the collection and processing of cones and seeds, and presently maintains an adequate seed stock to support its artificial regeneration program through the current FMP period. At March 31, 2005, the Company had a stock of 218 million jack pine, 3.7 million white spruce, and 87.5 million black spruce seeds. During the 1998 FMP terms for the Nakina North and Ogoki Forests, the Company exceeded its planned seed collection targets for jack pine and black spruce by a combined total of 178%. The program for growing trees for planting is also adequate and the Company works with local growers to ensure consistent quality.

### *3.4.6 Silvicultural Achievements*

Table 8 assesses the planned targets for regeneration and site preparation, with the actual achievements for the 1998-2003 planning term for the Nakina and Ogoki Forests. Since the actual normal harvest area achieved was only 75% of planned, renewal targets in the respective 1998 FMPs have been pro-rated by the same factor to calculate the percentage values.

The artificial regeneration program for the 1998 FMPs has essentially been achieved as planned, with 91% of the planned tree planting and 114% of the planned seeding completed, for a combined total implementation of 95% of the planned artificial regeneration. Although the area site prepared was less than the area planted and seeded, the difference represents 601 ha that were planted without site preparation.

Natural regeneration targets have not been achieved. Only 31% of the CLAAG and none of the natural regeneration after clearcut was reported as implemented. As a result, actual natural renewal reached 13.5% of planned levels, on a combined basis. The reason for the shortfall is mainly related to the manner in which natural regeneration has been reported by the Company. Until recently, the Company preferred to report natural regeneration areas only when natural regeneration success was achieved, or alternatively when there was a need for further treatment. The requirement is that natural regeneration areas should be reported within one year of harvesting.

**Table 8. Silvicultural accomplishments for the 1998-2003 FMP term as a percentage of the planned activities for the Nakina North and Ogoki Forests.**

| | Actual Area (ha) | | | % of Planned Area | | |
|---|---|---|---|---|---|---|
| **Renewal Activities** | Ogoki | Nakina North | Both | Ogoki | Nakina North | Both |
| *Natural Regeneration* | | | | | | |
| CLAAG | 332 | 257 | 589 | 30.0% | 31.2% | 30.5% |
| Clearcut | 0 | 0 | 0 | 0% | 0% | 0% |
| ***Subtotal Natural*** | ***332*** | ***257*** | ***589*** | ***11.5%*** | ***17.3%*** | ***13.5%*** |
| *Artificial Regeneration* | | | | | | |
| Planting | 2,888 | 1,546 | 4,434 | 83.0% | 111.2% | 91.1% |
| All seeding | 1,043 | 145 | 1,188 | 132.5% | 56.7% | 113.9% |
| ***Subtotal Artificial*** | ***3,930*** | ***1,691*** | ***5,621*** | ***92.2%*** | ***102.7%*** | ***95.1%*** |
| **Total Regeneration** | **4,262** | **1,948** | **6,210** | **59.6%** | **62.3%** | **60.4%** |
| *Site Preparation* | | | | | | |
| Mechanical | 3,416 | 1,604 | 5,020 | 60.6% | 70.5% | 73.5% |

In part, the rationale for this is to ensure that success rates of natural regeneration treatments can be assessed in an unbiased manner. However, the lack of reporting may account for LWI's concern about the adequacy of hardwood renewal; as noted in section 3.4.3, good hardwood suckering was observed on a number of recently harvested hardwood sites.

The Company intended to assess a large part of the backlog natural regeneration area in the final year of the 1998 FMP term (2002), but for logistical reasons the surveys were not implemented at the planned level. We note however, that in 2003, the first year of the new FMP, 3,682 ha of natural regeneration, including 2,712 ha of CLAAG area were reported. This included a significant proportion of the backlog area from the 1998 FMPs.

In the 1998 FMPs, natural regeneration represented on average 45% of the planned renewal program, while in the 2003 FMP, natural regeneration accounted for 41% of the total renewal program, or nearly one-half of the total. We have some concern that the area associated with the 1998 FMP targets, which were significantly under-achieved for the 1998 FMP period, should not be lost as the Company moves into a set of new targets associated with the 2003 FMP. Due to the importance of natural regeneration to the renewal program for the Ogoki Forest, we believe that the balance of natural regeneration area from the 1998 FMP period should be carried forward into the subsequent FMP term(s). In other words, the area of planned natural regeneration in the 2003-2008 FMP should be increased, through an FMP amendment, by an amount equal to the shortfall in reporting of natural regeneration area from the 1998-2003 FMP term, indexed to the actual harvest levels achieved during the 1998-2003 period, or 84% of the 1998 planned level of natural regeneration (5,832 ha) minus the area actually reported during the 1998-2003 period (589 ha), which equals 4,310 ha.

Only one year of information (2003/04) was available at the time of writing for the 2003-2008 FMP term. In 2003, the Company reported 3,681 ha of natural regeneration and 2,489 ha of artificial regeneration, for a total of 6,170 ha, or 96% of the annualized target for total regeneration from the 2003 FMP. Also reported in 2003 were 1,946 ha of site preparation, or 88% of the annualized target.

**Recommendation # 17**

**By March 31, 2006, the Company should amend the natural regeneration target in the 2003 FMP to ensure that the balance of planned but unreported natural regeneration area from the 1998 FMP term for the Nakina North and Ogoki Forests (consistent with the actual harvest levels for the 1998 FMP term) is carried forward. The Company should take appropriate measures to ensure that the reporting of natural regeneration will substantially meet the 2003 FMP targets on an annual basis.**

### *3.4.7 Access*

#### Gravel Pits

Road construction was a major activity on the Ogoki Forest during the audit period, given that there is limited or no access to many parts of the Forest. The forest industry is empowered to excavate sand, gravel and other aggregate material for road construction from pits that are only allowed to remain open for two years. Once the pits have been closed off, they are required to be rehabilitated, which includes slope stabilization and replacement of topsoil. If a pit remains open for more than two years, it shifts from being covered under the regulations known as “Class 14” to “Class 9”, which has more onerous requirements, including the provision of a site plan and monitoring.

The Ontario Environment Commissioner’s 2002/03 Annual Report notes that in Ontario, between 1992 and 2000, only half of the area converted to aggregate pit development was being rehabilitated each year, suggesting that many pits are not rehabilitated once their use ceases. Thus, rehabilitation is a widespread issue in Ontario.

On the field portion of the audit, at least one aggregate pit was seen that had not been properly rehabilitated (side slopes were too steep, no topsoil replacement) yet trees had been planted on the road and landing associated with the pit, so it was obviously closed (See Figure 9).

**Recommendation # 18**

**The Company should rehabilitate closed gravel pits as required by provincial statute.**

## Water Crossings

During the audit, we inspected twelve recently constructed bridges and several culvert installations. MNR staff expressed consternation with the quality of some of the water crossings, and in general, the Audit Team agrees with their concerns.

Problems with recently-installed crossings included: lack of small rip-rap, missing side-rails, poorly installed wing-walls, missing geotextile fabric (intended to prevent fine materials from eroding into the waterway), too-short culverts, and too-steep slopes, too short bridge spans and improperly placed and sized abutments. In many instances, there was a difference of opinion between Company staff and Ministry staff regarding the importance and seriousness of the shortcomings of the crossings. This is evident in the results of the compliance inspections. For example, FOCIS summaries show that of 46 inspections completed by Industry in which water crossings were inspected, 44 were found in compliance regarding adherence to AWS crossing details, whereas of 38 completed by MNR staff, 13 were found either not in compliance (5 of 13) or in compliance with comments (8 of 13). Similarly, FOCIS summaries of Industry inspections for short-term erosion protection measures showed 42 of 46 were in compliance, 3 were in compliance with comments, and 1 was not in compliance, whereas of 38 inspections completed by Ministry staff, 11 were found either not in compliance (4 of 11) or in compliance with comments (7 of 11).

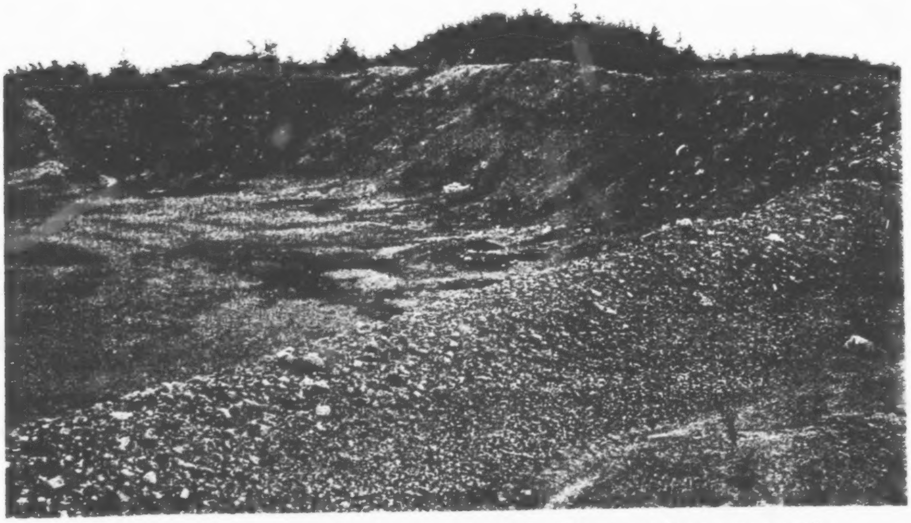

**Figure 9. An example of a closed gravel pit that has not been properly rehabilitated. Note recently planted tree in the lower right hand corner.**

The Audit Team strongly believes that the Company needs to improve the quality of its water crossing installations, consistent with the guidance provided by the Ministry's standards for crossing installation in the Environmental Guidelines for Access Roads and Water Crossings.

One of the appendices to the 2003 FMP is a Water Crossing Protocol and Technical Manual, collaboratively prepared by the Company and local MNR. The document states that "As part of the 2003-2023 Ogoki Forest Management Plan, Long Lake Forest Products and the Geraldton Area Ontario Ministry of Natural Resources have developed the following protocol which outlines how the Company and third party licensees operating on the Forest will deal with the selection of water crossings that will be installed during the 2003-2008 plan term." Given this mandate, and that the Company and MNR put an obvious amount of effort into the document, the Audit Team is surprised that the issues identified above were evident in the crossings inspected. The Audit Team believes that the Company and MNR should revisit the Water Crossing Protocol and Technical Manual and identify how such problems came to exist, and modify the manual as required to safeguard against the continuation or recurrence of such issues.

The Audit Team also believes that, where practical, existing poor-quality crossings should be brought up to the identified standard. However, in some cases, repairing the crossing could cause damage to the waterway, and so the best course of action may be to live with the existing crossing. Furthermore, the Audit Team believes that the Company should consult with MNR when deciding whether to repair deficient crossings.

**Recommendation # 19**

**The MNR and Company should work together to revise the existing Water Crossing Protocol and Technical Manual to ensure that future crossings meet the requirements and specifications of the Environmental Guidelines for Access Roads and Water Crossings. The MNR and Company should jointly decide which crossings are in need of repair and on the course of action required to repair each crossing.**

Finally, the Audit Team noticed a number of instances in which culverts had been left lying in the bush, such as the instance shown in Figure 10. These are unsightly and should be removed.

**Recommendation # 20**

**The Company should remove unused culverts from the Forest by December 31, 2006 and, in future, ensure that these items are picked up once water crossing/drainage installation has been completed.**

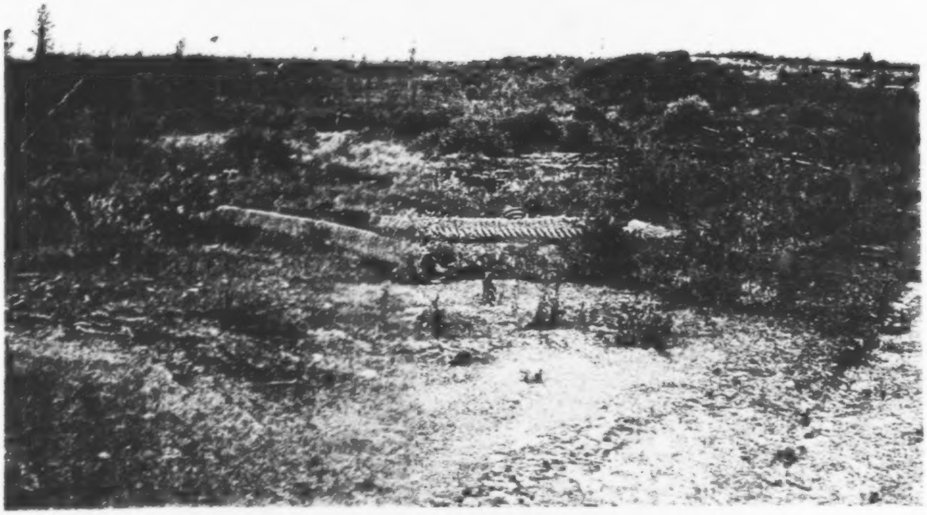

Figure 10. Abandoned culverts on Stag Lake block.

## 3.5 SYSTEMS SUPPORT

### 3.5.1 Human Resources

BFP is in the process of implementing an ISO14001 compliant environmental management system (EMS) for the entire BFP group of companies. Although the system is currently operational on other forests, it will not be fully operational on the Ogoki Forest until the registration audit is performed this fall. Implementation of the EMS is guided by an environmental policy, objectives, targets and detailed strategies to achieve stated objectives and targets for each of the EMS components.

The EMS also describes the roles and responsibilities of various staff and contains a training matrix which is used to determine which staff should receive training for the various program components. Training summaries indicate that courses appear to be well attended and personnel well-trained to do their jobs, however, the bewildering array of spreadsheet summaries for the various classes of training is very confusing and makes it difficult to track individual training progress. However, LLFP personnel confirm that efforts are currently underway to streamline processes for tracking attendance.

Although the scope of the EMS does include LLFP staff, contractors and overlapping licensees, much of the responsibility for OL training, education, supervision and monitoring has been delegated to OLs themselves, not all of whom have demonstrated a level of performance commensurate with this responsibility. There are indeed provisions for OLs to receive limited training and direction from LLFP, however, they are nevertheless deemed responsible for their own actions as overlapping licence holders and maintain responsibility for the training and supervision of their own employees.

Evidence was presented by LLFP demonstrating that personnel associated with AEDC, Eabametoong Forest Development Corporation (EFDC), and MFFDC had received mechanical harvesting equipment operator safety training. Given the disproportionately high level of non-compliant operations by these OL-holders, it is certainly possible that their personnel did not receive adequate training and/or sufficient levels of supervision. Though their harvesting levels have been relatively low in comparison to LLFP, this is nevertheless problematic for the successful implementation of the EMS and fulfilment of SFL conditions. This issue is discussed in more detail under Compliance Monitoring in Section 3.6.1, where it leads to a recommendation.

Interviews and field observation suggest that staff and contractors generally possess the necessary credentials and skills to perform their duties, although the sufficiency of supervision and training for OLs was observed to be lacking. Interviews suggest that staff understand their duties although they face heavy workloads and are often challenged to keep up with their day to day commitments. Nevertheless, continual improvement under the EMS should eventually lead to improved field performance.

MNR staff also appear to be well trained and aware of their duties. MNR has a very well organized and effective training program in place to provide the most current direction and interpretation to both MNR and Company staff involved with the development of forest management plans. It is centrally administered from Sault Ste. Marie, with a series of FMP training modules held regionally each year for all active planning teams. This is the main mechanism through which MNR strategic direction is implemented at the forest level. Training sessions for the 2003 FMP appear to have been well attended by both the industry and MNR members of the planning team.

Although MNR personnel are heavily taxed by workloads associated with the performance of forest operations inspections, as well as the review and approval of annual work schedules, FMP amendments and annual reports, they have nevertheless maintained a satisfactory level of performance in their daily duties. However, conflicting program priorities can draw staff away from their duties, often interfering with the timely review and approval of documents or follow-up to identified compliance issues.

### *3.5.2 Documentation and Quality Control*

As indicated above, an ISO14001 compliant EMS will not be fully operational on the Ogoki Forest until the fall of 2005. Although the evolving EMS holds great promise as a framework for document control, there are a number of internal processes and procedures that demand attention. Specific problems observed during this audit include the following:

1) Indistinct labelling and poor filing of FMP amendments and AWS revisions;
2) Errors in FMP amendment and AWS revision summaries;
3) Failure to maintain approved AWS documents in their original condition (see 3.3.8);
4) Inability to verify that outstanding AWS requirements had been satisfied;
5) Failure to submit AWS revisions for large renewal projects;

6) Neglecting to update Annual Plans of Action (APAs) with AWS revisions per the commitment contained in the five-year compliance plan;
7) Inadequate system to provide and document start-up notification of operations;
8) Failure to electronically submit FOIRs consistently within required timelines; and
9) Confusing array of spreadsheets to track qualifications and training course attendance of personnel from the Company, contractors and OL's.

Although many MNR documents and records were well-organized, there were also a number of internal processes and procedures that demand attention. Specific problems observed during this audit include the following:

1) No documentation of planning team activities/decisions after 2nd information centre;
2) Poor documentation of LCC/planning team member attendance at information centres;
3) Poorly organized public consultation and correspondence binders;
4) Multiple binders for planning team minutes containing divergent content;
5) Missing advertisements and attendance sheets for first and second information centres;
6) Missing or poorly labelled lists of required alterations;
7) Incomplete documentation of delivery of amendments to specified locations;
8) Confusing numbering systems for FMP amendments and AWS revisions;
9) Inconsistent reference to compliance targets in Parts 1 & 2 of District ACOPS;
10) Failure to electronically submit FOIRs consistently within required deadlines; and
11) Untimely review of annual reports.

Because of the difficulty encountered by the Audit Team in retrieving certain documents and verifying that various forest management planning requirements had been fulfilled, both MNR and LLFP should work to improve their internal procedures for document control and record retention.

**Recommendation # 21**

**MNR and LLFP should institute procedures to effectively document forest management planning processes, track the development and distribution of documents and ensure the timely and accurate submission of related records.**

## 3.6 MONITORING

### *3.6.1 General Monitoring*

Under general monitoring, we report on the various programs that Long Lake Forest Products has in place to track its renewal efforts, including pre-harvest prescriptions, and on compliance monitoring undertaken by both MNR and the Company.

#### Monitoring of Renewal

No free-to-grow surveys were required or implemented during the audit period, since the first natural regeneration projects on the Forest occurred in 1999 and the first artificial regeneration projects occurred in 2001.

LLFP has developed an excellent monitoring program to support its silviculture program and to evaluate effectiveness. Field surveys, both formal and informal, are conducted at various stages in the management of a stand. These include informal field checks, assessments of silvicultural projects upon completion (SIP, tree plant, and seeding), and the establishment of "permanent sample plots" on regenerated areas. The latter include the traditional survival plots associated with tree plants that are expanded to include growth and yield information as well as assessments of site condition, including competing vegetation.

Three years after treatment, LLFP surveys the treated areas to assess the treatment's effectiveness in terms of survival, density, and growth, and to identify any need for further treatment, including tending.

The assessment methodology is well-designed, flexible, and makes use of appropriate information technology. The surveys are well-integrated with the Company's mapping and reporting system. From an auditor's perspective, the most impressive aspect of the silvicultural effectiveness monitoring (SEM) program was its demonstrated ability to be refined to provide information to help resolve specific issues. We observed several examples of how the information had been used to plan and refine aspects of the silvicultural operations on the ground, as well as use of the information in strategic planning. Although we have seen similar technology and survey methodologies in use by other companies, we believe that the program as a whole is worthy of a best practice, because of the level of thought that clearly went into its design, and the focused manner in which it has been implemented. Senior planning and silvicultural staff of LLFP have been involved in the design and implementation of the SEM program throughout its development.

**Best Practice # 2**

**The Company is to be commended for designing and implementing an excellent SEM program for the Ogoki Forest.**

## Compliance Planning

The 2004-05 Nipigon District Annual Compliance Operations Plan (ACOP) is based on the 2004 Northwest Region Compliance Strategy. It defines priorities for environmental health, public health and environmental safety, economic health and enhanced horizontal integration. It also sets specific targets for the performance of verification compliance inspections and outlines strategies to carry out joint inspections with industry and to informally monitor roadside utilization and wood transport.

The Part 2 Compliance Activity Schedule summarizes specific targets by theme. These are sometimes inconsistent with the targets stated in the text of Part 1. For example, Part 1 states that 96 verification compliance inspections will be performed on two SFL holders within the Geraldton Area (no mention of OL's) and that 3 field audits will be performed on licensees harvesting on private land that abuts Crown land; however, Part 2 states that 10 compliance inspections will be performed per month or as required while 2 field audits will be performed on private land harvesting adjacent to Crown land.

Similarly, the 2000-01, 2001-02, 2002-03 & 2003-04 ACOPs are based on the 1999 Five Year Compliance Strategy Plan. They define priorities for public safety, protection of fish & wildlife habitat and populations, revenue retention, large lake fisheries, significant features protection, auditing, public service, training and enforcement performance measures. Geraldton Area targets are set for the number of unplanned compliance inspections, verification inspections and field audits on licensees harvesting on private land abutting crown land. Inconsistencies between stated targets in Part 2 and in the text of Part 1 were observed in each of these ACOPs, similar to those described for 2004-05. These inconsistencies raise some concern regarding document control and the potential confusion that could arise.

Although all five ACOPs provide summaries of proposed compliance activities for the Geraldton Area, none provides resolution on the numbers of various inspections planned for the Ogoki Forest. Similarly, MNR annual compliance summaries for the Geraldton Area provide little insight into the degree of compliance for forestry operations on the Ogoki Forest. As a result, it is difficult to extract Ogoki Forest compliance information from Geraldton Area ACOPs and compliance summaries

**Recommendation # 22**

**MNR should provide specific Ogoki Forest compliance targets and summaries within its compliance planning and monitoring documents and ensure that Part 1 and Part 2 of future Geraldton Area ACOPs make reference to the same target inspection levels.**

With respect to the frequency of MNR inspections, the Geraldton Area ACOP target is to conduct approximately 96 verification compliance inspections each year on two SFL holders (see Criterion 6.1.1.1). Although no breakdown is provided for the Ogoki Forest, staff confirmed that the target was split evenly between the two SFLs (i.e., 48). In contrast, inspection levels have ranged from 15 to 34 inspections per year for the combined Ogoki and Nakina North Forests from 2000 to 2003. Similarly, there were 28 inspections for the amalgamated Ogoki Forest from 2003 to 2004, suggesting that MNR compliance inspection levels are falling somewhat short of targets for the Ogoki Forest.

This may be due in part to the unpredictable harvesting levels by overlapping licensees; however, this is unclear since compliance inspections targets do not specify whether or not inspections of overlapping licensees are included. Also, interviews with MNR staff revealed that 2005-06 ACOP targets are less ambitious and have been lowered in recognition of staffing limitations. However, based on the relatively consistent number of reported non-compliances by activity by LLFP and MNR (see Compliance Reporting, below), this level of monitoring appears sufficient to identify non-compliant operations.

The 1998 Ogoki and Nakina North FMPs both contain discussions of the monitoring programs that were to be used in the five-year term to monitor forest conditions on the respective management units. Although they include discussions of the compliance monitoring program to be implemented on both forests, they do not contain specific provisions for the monitoring of AOCs. Nor do they include a discussion of measures for monitoring the effectiveness of AOC prescriptions which are exceptions to the implementation manuals. Similarly, they cite adherence to the provincial silvicultural guides as well as the silvicultural ground rules and treatment packages included in the FMP but do not reference whether there are treatments that are exceptions to the guides requiring specific measures for monitoring their effectiveness.

In contrast, the 2003 Ogoki FMP contains required discussions for the compliance monitoring program to be implemented on the Forest, as well as the monitoring of exceptions to implementation manuals and a thorough discussion of silvicultural effectiveness monitoring. It also includes a discussion of the EMS framework to be employed to ensure compliance with relevant legislation, regulations and policy and continually improve forest operations.

It is also a requirement of the FMPM that this section of the plan must contain a "description of the monitoring methods which will be used to determine the effectiveness of any silvicultural treatments which are exceptions to the recommendations in the silvicultural guides". Although the plan does not contain any exceptions to the silvicultural guides, it would nevertheless be prudent to state this in the text.

**Suggestion # 11**

**Where the 2008 FMP does not contain exceptions to the provincial silvicultural guides, LLFP should ensure that the FMP states this in the Monitoring and Assessment section.**

The five-year *Compliance Plan for the Timber Management Operations of Long Lake Forest Products Inc.* contained in both the 1998 Ogoki and Nakina North FMPs provided the framework for developing Company Annual Plans of Action (APA) for first three years of the audit term (e.g., 2000-01, 2001-02 & 2002-03). The document, which appears to have been identical for both forests, was written in advance of the Guideline for Forest Industry Compliance Planning (1998) and lacks many of the required components and forest-specific detail. In contrast, the five-year *Compliance Plan for the 2003-2023 Forest Management Operations on the Ogoki Forest* is a well-written document that fully meets the requirements of the Guideline for Forest Industry Compliance Planning (2001). As such, it provides the framework for the development of Company APAs for the last two years of the audit term (e.g., 2003-04 & 2004-05).

However, it also contains a commitment to revise Company APAs in accordance with every AWS revision (there were seventeen in each of the last two years) and forward them to the MNR. Interviews with LLFP staff reveal that this is not occurring. As this is an onerous commitment, the Company may wish to consider removing it in future APAs.

**Suggestion # 12**

**For the next five-year compliance plan, LLFP should consider removing the commitment to formally revise APAs each time there is an AWS revision.**

With respect to the production of APAs, these generally meet the requirements of the Guideline for Forest Industry Compliance Planning (2001). Recent APAs briefly identify a number of compliance issues including trespass, roadside utilization, lack of markets, water crossing installation and lack of timely communication between LLFP, OLs and MNR for start-up notification. They also include strategies to address these issues. Monitoring frequency requirements are stated for the various types of compliance inspections and a detailed schedule contains inspection targets for each harvest block, renewal block, water crossing installation and access road.

However, closer examination reveals that the summary of identified compliance issues and improvement initiatives is identical for the two most recent APAs. The Guideline for

Forest Industry Compliance Planning requires that "Each year, based upon a number of factors and considerations, revised compliance priorities are to be identified." Thus, it would be reasonable to expect this section of the APA to be updated if priorities have changed. Accordingly, LLFP should annually review this section of the APA and update it as required.

**Suggestion # 13**

**LLFP should annually review and update the summary of identified compliance issues and strategies contained within the Annual Plan of Action.**

## Compliance Monitoring and Performance

Industry reported 16 harvest related non-compliances and 3 access related non-compliances for a total of 19 non-compliances during the four-year period from April 1, 2000 to March 31, 2004. Of these, 12 were reported by LLFP and 7 by various overlapping licensees. The number of industry reported non-compliances varied from 3 to 7 per year (e.g., 3, 5, 4 & 7 from 2000-01 to 2003-04 respectively). Although no clear trend or improvement over time is evident, this analysis does not include reported non-compliances for 2004-05 which could suggest improvement.

Similarly, MNR reported 17 harvest related non-compliances and 6 access related non-compliances for a total of 23 non-compliances during the same four-year period. Of these, 14 were filed for LLFP operations and 9 for various overlapping licensees. The number of MNR reported non-compliances varied from 3 to 8 per year (e.g., 3, 7, 5 & 8 from 2000-01 to 2003-04 respectively. Although, no clear trend or improvement over time is evident, consistency between the types of non-compliances reported by MNR and Industry supports the idea that most types of non-compliances are being detected.

The vast majority of Industry-reported harvest infractions were for minor trespasses. However, interviews with LLFP and MNR personnel suggest this issue has been largely solved with the recent use of GPS equipment and implementation of standardized boundary marking techniques. Access related infractions were for the location of a road outside the approved corridor, failure to follow the FMP/AWS prescription and the improper installation of a water crossing. The same trend is observed with MNR reported non-compliances, the majority of which were verification audits of Industry reported non-compliances. However, MNR inspectors detected greater numbers of residual tree and water crossing infractions and also detected wood measurement and utilization issues that industry did not report on. Of 23 MNR reported non-compliances, 22 were classified as minor while only 1 was classified as moderate.

In addition, both MNR and LLFP were reluctant to declare non-compliances for site damage/rutting because of the lack of measurable standards. There also appeared to be slight differences in interpretation regarding acceptable installation practices for bridges and crossings. As a result it is recommended that MNR and LLFP undertake a greater number of joint inspections to resolve on-ground differences of interpretation; calibrate operational standards applying to specific operations (e.g., water crossings, utilization, site damage); and for learning, communicating and clarification of issues.

**Recommendation # 23**

**MNR and LLFP should perform a greater number of joint inspections to develop a common understanding of operational standards applying to various types of operations.**

Of particular concern, though, is the relatively poor performance of AEDC, MFFDC and EFDC as OLs with respect to compliance. The relative rate of non-compliance for OLs is much higher than average when viewed in comparison to actual harvest levels. For example 7 of 19 industry reported infractions and 9 of 23 MNR reported infractions were for OLs. This represents a disproportionately high number of infractions – during the first four years of the audit period, the overlapping licensees harvested approximately 300,000 $m^3$ out of the 2.6 million $m^3$ cut during the period on the entire licence. Of the OL's, the three companies mentioned above harvested 150,000 $m^3$, and were responsible for almost all of the OL non-compliances. MNR staff commented that they sometimes turned a blind eye to non-compliances by these companies, as an act of leniency, and this approach also included a lack of follow-up action to some compliance orders. MNR staff admitted that this lenient approach probably backfired, and as of the field inspection in the 2005-06 fiscal year, licences had not been issued to MFFDC due to the large number of unresolved past problems. The Company also accepted a lower level of performance from AEDC, MFFDC, and EFDC than they would have from other companies, again in an effort to be supportive. The level of harvesting completed by each OL-holder is described in Section 3.8.3.

Regarding renewal operations, MNR conducted 15 inspections during the audit period. There were no non-compliances and two instances of "in compliance with comments". Both were related to operations being conducted without an approved FOP or outside the approved AWS area. In the same period, the Company conducted 7 inspections, showing no non-compliances and two instances of "in compliance with comments", the latter corresponding to the MNR reports. The issue of conducting silvicultural operations without an approved FOP was discussed in Section 3.3.8.

The Five-Year *Compliance Plan for the 2003-2023 Forest Management Operations on the Ogoki Forest* clearly defines the roles and responsibilities of those responsible for various compliance activities, including LLFP staff, contractors and overlapping licensees. Overlapping licensees are obligated to abide by the LLFP Compliance Plan and all relevant government standards and are responsible for establishing a monitoring program acceptable to LLFP and providing copies of inspection reports to LLFP.

Three Nations Management Inc. (TNMI) was set up to provide a framework for the training of First Nations staff and the delivery of the compliance monitoring program for AEDC, MFFDC, and EFDC. Although inspections were carried out by qualified inspectors for both MFFDC and EFDC as required by the plan, it appears that none were performed on behalf of AEDC. Missing Completed/Suspended FOIRs for some blocks also suggests that sufficient numbers of inspections may not have been performed by MFFDC and EFDC. With respect to Nakina Heritage Corporation (NHC), a sufficient number of FOIRs appear to have been submitted and harvesting performance was exemplary in spite of two reported non-compliances early in the audit period. Thus the efficiency and effectiveness of 'delegation' to overlapping licensees was low for three OL-holders and high for NHC.

In addition to performing insufficient numbers of inspections, the harvesting performance and compliance of AEDC, MFFDC, and EFDC with government regulations was well below average. This can be seen through the disproportionately high number of reported non-compliances by industry and MNR (confirmed in the field) as well as the number of outstanding MNR compliance orders. Certainly, there has been some loss of operational control and diminished harvesting performance with the delegation of compliance monitoring activities to these three companies.

New requirements for roles and responsibility in the Guideline for Forest Industry Compliance Planning (2005) require that either of the following conditions be satisfied in order for an OL to assume responsibilities for compliance planning, monitoring and reporting as well as the education and training of its workers: 1) The OL must hold an SFL itself in the same company name but on another forest management unit; or 2) a large OL must demonstrate that it possesses the ability and resources to effectively assume additional responsibility. In either case, the OL must provide the completed inspection reports to the SFL-holder, who is responsible for submitting them to MNR's FOIP database.

Given the dissolution of TNMI, the poor track record and current inactivity of three OLs, these new requirements will almost certainly preclude LLFP from delegating the type of compliance monitoring responsibilities that were delegated to AEDC, MFFDC, and EFDC in the last five-year compliance plan. Should any of these companies decide to become active in the future, LLFP and the prospective OL-holder will have to make a strong case to MNR in order for LLFP to delegate any of its compliance monitoring responsibilities. Such a case should include the details of any business relationship that would enable the OL-holder to meet these criteria as well as sufficient third-party audit provisions to ensure a minimum level of performance.

If successful, LLFP should provide a stronger oversight role for the monitoring of the compliance plan and its implementation while the MNR would be obligated to perform sufficient numbers of "Audit" and "Spot-Check" inspections. Otherwise LLFP will assume full responsibility for compliance planning, monitoring, inspecting and reporting compliance; prevention, education and training of its own workers and those of the OL. In either case, third-party audit provisions should be sufficient to ensure a level of performance and remedial action to meet the expectations of both MNR and LLFP.

**Recommendation # 24**

**In accordance with the requirements of the Guideline for Forest Industry Compliance Planning (2005) and in advance of the 2006-07 fiscal year, LLFP and any Company wishing to operate as an overlapping licensee should make a joint request to MNR for the delegation of compliance monitoring responsibilities on blocks that will be harvested by the OL.**

## Compliance Reporting

Comparison of AR-12 reports with FOCIS data reveals some minor inconsistencies. For example, the number of inspections performed by industry differs in 5 of 7 fall and spring report submissions while the number of inspections performed by MNR differs in 2 of 7. Also, the number of industry reported non-compliances vary in 2 of 7 submissions while the number of MNR reported non-compliances vary in 1 of 7. Most of these differences appear related to inspections performed beyond the end of the fiscal year which were not captured in the original AR-12s. Although more effort to ensure that all inspections were completed before the end of the fiscal year would certainly have reduced the extent of this problem, it is believed that such inconsistencies will be virtually eliminated in the future with delayed annual reporting under the FMPM (2004).

Further review of FOCIS data suggests that LLFP has generally satisfied requirements to perform inspections and submit FOIRs for the full scope of forest operations; however, timelines to submit completed FOCIS reports into the provincial Compliance Information System (CIS) within 10 days as specified in the Guideline for Forest Industry Compliance Planning (2001) were often exceeded. For example, approximately 40% of industry FOIRS were submitted late (16 of 42) for the 2003/04 fiscal year. Similarly, MNR often exceeded the 10 day timeline to submit completed FOCIS reports into CIS. For the 2003-04 fiscal year, almost 75% of MNR FOIRs were submitted late (23 of 30).

**Recommendation # 25**

**MNR and LLFP should provide ten days notice of completed inspections to each other and electronically submit FOIRs within twenty days as required by the Guideline for Forest Industry Compliance Planning (2005).**

Although a system did exist in the past to develop a general start-up notification for the year in conjunction with MNR area technicians, these technicians have since retired and it is difficult to retrieve this information. With respect to start-up inspections, these have been performed sparingly and it is the opinion of MNR compliance inspectors that LLFP has often provided insufficient notice of commencement of operations. However, MNR inspectors did also testify that the situation is gradually improving. Regardless, start-up notices were neither well documented nor easily retrievable.

**Suggestion # 14**

**MNR and LLFP should jointly develop a system to ensure that start up notification is provided, properly documented and retrievable for each block.**

Of greater concern is the almost total lack of "Completed" inspection reports entered into FOCIS. This is due to the operational block designation system used by the Company, as described in section 3.3.6 (Operational Harvest Planning). In fact, only two blocks on the Ogoki Forest have actually been closed off by LLFP or any OL. All others have been classified as "Suspended", mostly because of un-scaled and un-hauled roadside wood (see Section 3.4.2). This problem is due at least in part to the sheer size of the operations blocks on the Ogoki Forest. If there is any un-hauled wood on a block, the entire block must be suspended to avoid MNR reported non-compliances.

In order to address this problem, LLFP and MNR are currently considering partitioning the blocks into smaller compartments for the purposes of compliance monitoring and reporting. This would allow a "Completed" report to be issued for a compartment when all of the wood has been hauled, while a "Suspended" report can be issued for a compartment while wood remains at roadside in it. This initiative is commended and is supported by the Audit Team through a recommendation. For other inspection types, in-progress inspections reports appear to have been performed submitted as required.

**Recommendation # 26**

**LLFP should use smaller operational block sizes to reduce confusion related to area-specific reports and to facilitate the performance and entry of "Completed" forest operations inspection reports. The Company should clear up its backlog of "Suspended" harvest blocks that were harvested during the audit period by September 30, 2006 and submit "Completed" inspection reports for each.**

With respect to the performance of verification audits, MNR verified many but not all industry-reported non-compliances during the term of the audit. In 2002/03 for example, industry reported 4 non-compliances and MNR reported 5 non-compliances; however only 1 of these resulted from a verification audit. More typically in 2002/03, industry and MNR reported 7 non-compliances each, with 3 of 4 MNR reported non-compliances resulting from verification audits.

**Recommendation # 27**

**MNR must verify all industry submitted non-compliant FOIRs in accordance with the requirements of the Guideline for Forest Industry Compliance Planning (2005).**

### *3.6.2 Annual Reports*

The Company has achieved fair overall performance in the submission of annual reports for operations performed during the term of the audit. Analysis of submission dates for fall and spring reports submitted within the term of the audit reveals that LLPF generally submitted their initial ARs within a month of the due date but two occasions exceeded reasonable timelines. The first occasion was for the 2001-02 Fall Ogoki AR which was not submitted until April 24, 2003 (160 days late) following completion of the 2003 FMP, the production of which involved labour intensive hand-colouring of maps. The second occasion was for the 2003-04 Fall Ogoki AR, which was not submitted until June 3, 2005 (195 days late). This delay resulted from the loss of local GIS personnel from Oct. 2004 to Feb. 2005 and subsequent reassignment of other woodlands personnel to new positions but still within the Ogoki Forest. Otherwise, 3 of 14 initial submissions were on time while 9 of 14 were submitted within 35 days.

MNR reviews of AR submissions were timely in 2000-01 but have been greatly extended from 2001-02 to present. For example, 4 of 14 MNR reviews were completed within 60 days while 10 of 14 were completed from 85 to 337 days. Workload, other priorities and technical difficulties were cited as the major factors causing the delays as well as recent MNR staff turnover and learning curve.

**Recommendation # 28**

**MNR and LLFP should allocate sufficient resources to ensure the timely preparation, submission and review of annual reports.**

LLFP resubmissions were generally prompt with 9 of 13 resubmissions made within 32 days. Although Company resubmission times were unjustifiably poor in 2000-01 (delays of 130 to 175 days), resubmission times improved greatly thereafter and have generally been timely for the remainder of the audit term.

MNR's T&C #77 Report was generally provided to the Company in a timely manner for inclusion with the fall annual report submissions. Although a month late in 2001, MNR submitted the report 2 weeks to a month early in 2002, 2003 and 2004.

With respect to annual reports, LLFP submissions/resubmissions during the term of the audit substantially met the requirements of the FMPM (1996). Recent spring reports state that no AR-7 or AR-9 tables were provided since forest operations only began in 1998 and there are not yet any treated areas to evaluate for renewal success, however, all other required tables, maps and stand listings were provided.

The 2003-04 Spring Report for the Ogoki Forest contains a good explanation of why areas affected by snow and wind on October 24, 2001 were not classified as "natural" depletions for the purposes of depletion reporting and subsequent renewal operations. The text also contains a comparison of FMP planned renewal activities vs. AWS scheduled and actual renewal treatment levels (Table A) and provides reasonable explanations for significant differences between scheduled vs. actual levels of activity. Significant overachievements in reported levels of CLAAG and clearcut natural regeneration were due to the survey and reporting of a considerable backlog of area harvested under natural SGRs that had built up over the past few years.

Although the text explains that no FTG surveys were performed in 2003-04, more than 900 ha of stocking/density surveys were reported for 2000-01 direct seeding and site preparation projects. This is the first year that such surveys have been performed and LLFP is reporting the results even though they are not FTG surveys, per se.

Previous spring AR submissions for the Nakina North and Ogoki Forests from 2000 to 2003 were also well written except for some minor errors that resulted from "cutting and pasting" text from previous years. For example, the text from the 2002-03 Nakina North spring submission mistakenly cites 3 instances of non-compliance immediately before describing the single incident of non-compliance that actually occurred.

Fall reports are also well written and contain all of the required text, tables, listings and maps required by the FMPM (1996) including the MNR T&C #77 Report for the management unit. The 2003-04 Fall Report for the Ogoki Forest contains a detailed description of the sources of information used to compile the report. The report contains a thorough explanation of both normal and salvage harvest area depletions as they relate to the snow and wind storm of October 24, 2001. Although damaged areas were reported as salvage and are summarized separately in Table AR-2a, they were not classified as natural depletions due to unique characteristics described in the text.

It also describes the disposition of the harvest area to LLFP and the annual allocation of planned area to the various overlapping licensees. Also, there is an excellent explanation of reported bypass areas and significant differences between scheduled vs. actual levels of depletion. Overall, 85% of the annual average forecasted area in the FMP was actually harvested in 2003-04. As required by the FMPM (1996), the report summarizes the percent of the available harvest area (AHA) harvested by forest unit during the year. The percentage of FMP volume harvested is reported by working group rather than forest unit, the latter of which, although a FMPM (1996) requirement, is impossible to report.

Annual report tables and maps generally reflected the work that was performed in the field. There were, however, some minor mapping inconsistencies related to the reconciliation and digitization of hand drawn maps. These minor discrepancies in reporting silvicultural activities (double counting) are of minor significance with small 3-4 ha areas. Nevertheless, the Company is aware of the issue and is working to correct it.

Finally, it is an FMPM requirement that annual reports summarize the results of any audits conducted during the year. However, the independent forest audit undertaken in 2000 was not mentioned in any subsequent annual reports. It is expected that the Company will correct this oversight with its submission of the 2005-06 annual report.

**Recommendation # 29**

**LLFP should include a discussion of the results of the 2005 IFA in the annual report submission for the 2005-06 year.**

More generally, on December 1, 2004, MNR issued direction to waive the District requirement to review all annual report submissions. MNR Districts are still required to review the more comprehensive ARs that will be produced at the end of years 3, 7 and 10 in the ten-year plan period. However, MNR District review of ARs produced in other years will be optional, with the proviso that MNR will review a sample of "regular" Annual Report submissions produced within each region (a minimum of two from each of the Northwest and Northeast Regions, and one from the Southern Region). This approach reflects the direction in the 2004 FMPM, which has shifted the onus onto the certifying RPF to ensure that the content is correct. During the IFA site visit, staff of both auditees brought this to the attention of the Audit Team, expressing concerns about this change of requirement.

The Audit Team believes that the intent of this change in direction is to free up MNR staff time, especially for those Area Teams who oversee SFL-holders whose initial AR submissions tend to have numerous errors. The Audit Team has, in previous audits, found that sometimes the MNR staff do the work of the Company in correcting the very rough draft AR's that are submitted. However, the Audit Team feels that there are other solutions available to this problem, such as conducting an initial check and sending the AR back to the Company without detailed review if it is of poor quality. In most cases, the mistakes that are made in the AR's are honest mistakes that are made in the course of compiling a complex report, and it is unreasonable to expect that the reports will be error-free. We note that the audit reports go through two draft stages before the final reports are produced – this is an accepted and normal mechanism for quality control in all professions.

The Audit Team feels that the new approach will inevitably lead to cascading errors that will become evident when the year 3, 7 and 10 AR reports are reviewed and will be all the more time-consuming and difficult to correct when they are finally caught. The end result may not be a time-saving and in the meantime, the risk of erroneous public documents being released will rise.

**Recommendation # 30**

**The Audit Team strongly recommends that Corporate MNR revise the 2004 FMPM to require MNR review of all annual reports and consider alternate ways to handle relevant workload issues.**

### 3.6.3 Report of Past Forest Operations

This audit encompasses two Reports of Past Forest Operations (RPFOs). The first RPFO was prepared for the 2003 FMP, and summarizes data for the Forest for the period 1988-1998. (Normally an RPFO summarizes data for a five-year period, but as this was the first RPFO prepared for the Forest, the Company summarized ten years of data in an attempt to provide a better benchmark of information.) For the ten-year period 1988-1998 no operations were undertaken on the Forest, so the 2003 RPFO provides data and summarizes the occurrence of natural disturbance on the Nakina North and previous Ogoki Forests. The document also recounts the tenure and inventory history and access construction efforts on the Forest during the ten-year period. The RPFO is understandably brief given that no operations occurred on the Forest. We find that the RPFO meets the requirements identified in the IFAPP.

The second RPFO summarizes operations on the Forest for the period 1998-2003. This RPFO was due on March 31, 2005; two years after the previous plan period had expired and is termed a preliminary RPFO. The preliminary RPFO was delivered on July 15, three-and-a-half months late. The FMPM requires that the preliminary RPFO be subject to MNR review and that comments from the MNR be incorporated prior to the stage one of the public consultation process (scheduled for Feb. 2006). Because the RPFO was submitted late, the MNR has not had an opportunity to comment at the time of the audit, and so the document is still considered an unreviewed draft. Although it is evident that much effort has gone into preparing the document, because it has not had the benefit of MNR comment and input, and is not yet complete, it was not deemed appropriate for this audit to undertake an in-depth review of the document.

Table 9 below presents the Audit Team's assessment of the draft preliminary RPFO produced to provide reference for the 2008 FMP.

The 1998-2003 RPFO contains a good discussion of silvicultural accomplishments during the period. Discussion of the success of silvicultural treatments, and the accuracy of predictions of future forest units was not possible due to the short time that the Forest has been under management: free-to-grow assessments were not scheduled during the term covered by the RPFO.

The RPFO reports that the total combined silvicultural expenditures for the period 1998 to 2003 were $4,550,746.37, 54% of the $8,303,000 planned in the FMP. The total amount was funded from the Forest Renewal Trust Fund. The expenditures were lower than planned, primarily because silviculture operations did not begin on either Forest until the spring of 2000. For the foreseeable future the level of revenue generated from the Forest will be adequate to fund all silvicultural activities at planned levels.

**Table 9. Summary of the 1999-2003 draft preliminary RPFO produced to provide reference for the 2008 FMP.**

| RPFO Element | Audit Assessment |
|---|---|
| Submission of Preliminary RPFO | The draft RPFO for the 2008 plan was due within two years of the expiry of the past forest management plan (i.e. by March 31 2005). The document was submitted 3.5 months late. |
| Analysis of planned vs. actual results | The RPFO contains several sections comparing planned vs. actual achievement of management operations. The rationale for differences between planned and actual levels provided in the RPFO text is consistent with the evidence gathered during the audit. |
| Achievement of Management Objectives | Discussion on the achievement of wood supply and silviculture objectives is detailed and reasonable. Discussion on the achievement of other objectives, most of which are subjective, relies on the fact that management was implemented following the direction of approved guidelines and legislation. |
| Description of Trends and Issues | Trends are not discussed as the RPFO covers the first five years of operations on the Forest. Issues are identified in the course of discussing each operational aspect of forest management. |
| Comparison of forest condition at start and end of the plan. | Imbedded in discussions on review of objectives and assessment of sustainability. |
| Explanations and Conclusions | As with achievement of objectives, conclusions are stated in quantitative terms for wood supply, silviculture, and operational objectives, but in subjective terms for other objectives. Comprehensive conclusions are provided. |
| Summary Document | Completed. |
| List of Amendments and explanations for their frequency | Summary of amendments is provided in the FMP, but the appendix listing the amendments was not provided. Brief explanation of the frequency of amendments is provided in the summary. |
| Assessment of Sustainability | Complete. |
| Summary of Independent Forest Audit Results | Complete |

## 3.7 ACHIEVEMENT OF MANAGEMENT OBJECTIVES AND FOREST SUSTAINABILITY

The IFAPP directs the Audit Team to assess the sustainability of forest management using a methodology described in IFAPP. IFAPP states that "Compliance with the applicable criteria [of the IFAPP] will determine whether the forest unit complies with the general principle of forest sustainability". The field observations of the Audit Team are also to be considered in assessing sustainability. Section 3.7.1 assess the extent to which the management objectives of the 1998 FMPs for the Ogoki and Nakina North Forests were met, and progress evident in meeting the objectives of the 2003 FMP.

Sections 3.7.2 and 3.7.3 review the information in the Comparison and Trend Analysis (See Appendix A) and RPFO, while section 3.7.4 presents our conclusions regarding sustainability.

### 3.7.1 Achievement of Management Objectives

The IFAPP requires that the assessment of achievement of management operations draw upon the most recent complete RPFO, and the plans under review. As described in Section 3.6.3, the most recent complete RPFO covers the term 1988 to 1998. As no management operations took place during that period, a review of management objectives based on the RPFO is moot.

Table 10 reviews the achievement of management objectives for the 1998 Ogoki and Nakina North FMPs. Although the two plans were distinct, they had identical objectives, and so they are reviewed in one table below. Table 11 reviews the progress evident in meeting objectives for the 2003 FMP.

To summarize the achievements of the 1998 FMPs:

- Many of the 1998 Forest Diversity and Forest Cover objectives were expressed in subjective terms which were difficult to measure, and none had quantitative targets. (The lack of quantitative targets was identified as a weakness in the last IFA and a recommendation to develop such targets was identified. The objectives included in the 2003 plan were a marked improvement in this regard.) Therefore, categorical assessment of achievement of the objectives is not possible. For most of the objectives, the strategies identified to achieve them were put in place.
- Assessment of some of the Social and Economic Objectives is hampered by a similar lack of quantitative targets. Conifer harvest achievement was reasonably close to planned levels, particularly if salvage is considered. Objectives which were not achieved related to hardwood harvest and providing benefits to First Nations. These issues remain a concern, although they are not entirely within the control of LLFP. Recommendations related to these topics are identified in this audit report.
- While the silvicultural objective in the 1998 FMPs was very general, as might be expected in a forestry operation that is just beginning to operate on a forest for the first time, the Company achieved roughly 95% of its planned level of artificial regeneration (adjusting the planned silvicultural targets proportionally to the amount of area actually harvested as a proportion of planned). Due to the manner in which natural renewal was reported (see section 3.4.6), the Annual Reports show that only 13% of the planned level was attained. If the Company reported natural renewal soon after harvest, the level of accomplishment would be higher.

**Table 10.** The Audit Team's Assessment of the Achievement of the Objectives of the 1998 Forest Management Plans. (Note the objectives for the Ogoki and Nakina North Forests were the same.)

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| **Forest Diversity and Forest Cover Objectives** | | |
| To ensure that the biological diversity of the Forest is maintained within the bounds of natural variation.<br>**Targets:**<br>None | Emulation of natural disturbance patterns and implementation of the caribou mosaic were the main means used to retain biodiversity. These practices were employed throughout the audit period. | The objective is rather vague and the lack of quantitative targets in the FMP makes it somewhat difficult to assess the extent to which it was achieved. |
| To manage for the maintenance of woodland caribou range and habitat through habitat maintenance and species range conservation.<br>**Targets:**<br>None | This objective was achieved through Implementation of the caribou mosaic and other aspects of the caribou guidelines. | The objective is rather vague and the lack of quantitative targets makes it somewhat difficult to assess the extent to which it was achieved. |
| To maintain moose habitat by implementing forest habitat management activities that allow for natural fluctuations in habitat and populations.<br>**Targets:**<br>None | 1998 FMP identified the following to achieve moose objectives:<br>• Emulation of natural disturbances;<br>• Use of SFMM to model habitat;<br>• Use of silvicultural and vegetation management techniques to control browse species;<br>• Commitment to ongoing values collection.<br>All these approaches have been implemented. | In the previous IFA, the Audit Team expressed concerns that the objectives related to moose, pine marten, fur-bearers (lynx), bald eagles, herons and osprey implied a greater degree of management precision than was warranted. In addition, the Audit Team felt that the objectives were non-quantitative and provided a poor basis for assessing whether they had been achieved. A recommendation was included in the previous audit report for development of quantitative objectives. |
| To maintain pine marten habitat by implementing forest management activities that allow for natural fluctuations in habitat and populations.<br>**Targets:**<br>None | Implementation of the marten guidelines and using the SFMM null hypothesis was the main means identified to achieving the objective.<br>These approaches were implemented. | |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| To maintain furbearer habitat by implementing forest management activities that allow for natural fluctuations in habitat and populations.<br>**Targets:**<br>None | Means to achieve this objective cited in the 1998 plan is the same as that described above for moose. | |
| To maintain heron / osprey habitat by implementing forest management activities that allow for natural fluctuations in habitat and populations.<br>**Targets:**<br>None | Implementation of the appropriate guidelines and using the SFMM null hypothesis was the main means identified to achieving the objective. | |
| To maintain bald eagle habitat by implementing forest management activities that allow for natural fluctuations in habitat and populations.<br>**Targets:**<br>None | As above. | |
| To ensure the protection and maintenance of water quality and habitat for fisheries resources within watersheds where forest management activities occur.<br>**Targets:**<br>None | Means cited to achieve this objective in 1998 plan included:<br>• Development of sediment control plans;<br>• Use of bridges rather than culverts where appropriate;<br>• Use of fish habitat guidelines. | This audit identified significant concerns regarding water crossings, including lack of effective sediment control in places. Although fish habitat guidelines were implemented, all aspects of the objective were not achieved. |
| **Social and Economic Matters Objectives** | | |
| To ensure that the Ogoki/Nakina North Forest Management Unit(s) is managed for sustainability in an economically and environmentally sound manner to produce a continuous and predictable supply of quality wood fibre for:<br>Saw log material for the Buchanan sawmills in | The total planned conifer harvest from both forests was 2.459 million m3, and during the 1998-03 period, the Company harvested 2.586 million m3. This included 0.446 million m3 of salvage harvest, which does not count against the allowable harvest. A total of 515,000 m3 of hardwood was planned for harvest from both | Hardwood utilization remains problematic on this forest unit, and the 2000 IFA felt that the nature of the hardwood licence conditions restricted the ability of LLFP to provide hardwood at a fair price to LWI and KCI. A recommendation was provided to re-negotiate the hardwood supply agreements to provide |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| Longlac and Nakina;<br>Aspen for veneer, flaker and pulp grades for Kimberly Clark and Longlac Wood Industries, and<br>Pulpwood/chips to trade for saw-log quality material from other forest units.<br>**Targets:**<br>None | forests; only 309,000 m3 or 60% of planned was actually harvested. Roughly 86% of the softwood harvested was processed in Buchanan's Longlac and Nakina mills, while 88% of the poplar harvested was shipped to the KCI and LWI mills. Chip trades, trades of pulpwood made once the wood has been delivered to either BFP mill, and other wood supply agreements have enabled the Nakina and Longlac mills to operate above their MROLs. | greater flexibility. The Company and Neenah Paper have signed a memorandum of agreement that both parties agree is working well. The relationship between Longlac Wood Industries and the Company is less fruitful, although there have been recent improvements. The evolving hardwood supply situation in the Nipigon area suggests that once larger mill demand issues are resolved, the LWI-Company relationship will improve. |
| To preserve the integrity of the Ogoki/Nakina North Forest Management Unit as a remote tourism value at the landscape and operational levels.<br>**Targets:**<br>None | Access management strategies have been successful in achieving this objective. | |
| To create road-based recreational and other non-timber commercial opportunities.<br>**Targets:**<br>None | The 1998 FMP identifies the following strategies:<br>• Use of vegetation management to protect recreational values;<br>• Provide road access opportunities;<br>• Recognize areas of significant non-timber commercial value;<br>• Maintain road access.<br>Although the strategies above have been implemented, some are rather vague. Given the restrictions on road access in much of the Forest, the extent to which this objective has been achieved is unclear. | The 1998 FMP does not provide targets for this objective, nor does the plan provide much of a strategy for achieving the objective. |
| To protect cultural and heritage values in the Forest. | Use of cultural heritage guidelines is the main means that this objective was addressed | |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| **Targets:**<br>None | | |
| To protect the integrity of the Ogoki Forest Management Unit and base to provide for inherent social and economic benefits to aboriginal peoples who traditionally use the Forest for subsistence and spiritual value.<br>**Target**<br>None | The efforts made by LLFP field staff to assist the First Nations harvesting operations are described below; First Nations people are also employed at the Nakina and Longlac mills. | |
| To provide business practices which will contribute to stable social, economic, recreational conditions within aboriginal and other local communities.<br>**Target**<br>None | LLFP and MNR staff reported that Company staff made concerted efforts to assist the First Nations overlapping licensees, providing assistance, lending equipment, and revising wood haul priorities when requested. However, the establishment of harvesting operations by the three first Nations appears to have been unsuccessful to date. Nakina Heritage Corp has proven to be a successful operator, and net revenue from the operation is used to fund community amenities and services. The Company has yet to fulfill its commitment to construct a garage/office complex in Geraldton. | The objective is rather vague, since business activity in the area will have a positive impact on local communities. The construction of the Nakina mill and re-opening of the Longlac mill have provided employment and other benefits to local communities, including First Nations communities (some of whose members work at the mills). However, the lack of specificity makes it somewhat difficult to assess the extent to which the objective was achieved. |
| **Silviculture** | | |
| To optimize forest renewal and maintenance by combining current silvicultural knowledge, information and technology with available forest renewal funds.<br>**Target:**<br>None. | The 2003 FMP was updated to reflect the knowledge and prescriptions contained in the Boreal Silvicultural Guide. The Company's silvicultural effectiveness monitoring program helps to identify the success of the prescriptions and any areas that require further treatment. | This objective has been met. |

**Table 11.** The Audit Team's Assessment of the Achievement of the Objectives of the 2003 Forest Management Plan.

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| **Forest Diversity and Forest Cover Objectives** | | |
| **Landscape:**<br>Use long term harvest allocations to maintain biological diversity (landscape pattern, composition and structure) within the bounds of natural variation and supply the habitat requirements for the seventeen regional wildlife habitat species<br><br>**Targets:**<br>Pattern<br>• Develop a range of harvest patterns and block sizes that mimic the frequency and distribution of the natural disturbance template for this Forest.<br>• Maintain a representative percentage of the Forest in old growth classes for each of the forest units measured at year 100. Each forest unit will have defined an acceptable range of area to be in old growth condition. A portion of this area should potentially be in large blocks greater than 1,000 ha.<br>Composition<br>• Maintain the proportion of area represented by each forest unit and wildlife habitat unit and/or show movement towards the bounds of natural variation as defined at year 100.<br>• Ensure no unacceptable shift in ratio of hardwood to conifer dominated forest types as a result of harvesting activities as | Pattern:<br>Company is implementing management consistent with the targets.<br><br>Composition:<br>Table FMP-3 shows projected achievement of forest composition targets.<br><br>Structure:<br>Company has provided evidence that snags and green-trees are being left, although the Audit Team has identified concerns with snag retention. Insular and Peninsular patches are being left consistent with targets.<br><br>Landscape Processes:<br>Planned operations are consistent with target achievement. | Pattern: Although operational implementation is consistent with target for objective, the Audit Team has identified concerns regarding the natural fire disturbance cycle which may suggest that old growth objective is not consistent with natural forest dynamics. (See section 3.4.6).<br><br>Pattern: Also, the Audit Team has identified that anticipated achievement of old growth objective is consistently at the low end of acceptable range and has identified a recommendation (Recommendation # 31) to increase the level of achievement of the old growth objective.<br><br>Structure: The Audit Team has identified a suggestion (Suggestion # 8) noting that further quantification of retention of snags and green trees is required. The recommendation is based on Audit Team's observation of uneven performance in snag retention and concerns expressed by Company and MNR that snags are highly prone to blow-down. |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| assessed at year 100.<br>Structure<br>- Maintain an average of 25 well-spaced trees per cutover ha with a minimum of 6 large diameter trees.<br>- Ensure that area within each harvest block is left uncut to create structure normally found in wildfire areas: 2-8% in island residual patches and 8-27% in peninsular residual patches.<br>Landscape Processes<br>- On a forest wide basis, ensure the total area disturbed by wildfires and harvesting does not exceed 10% of the total productive forest within second-order stream watersheds during any ten year period.<br>- Ensure there is no damage to the productivity of ES 12 sites.<br>- Ensure that no negative effects, especially the establishment of unauthorized access, occur to Provincial Parks or Conservation Reserves as a result of forestry operations. | | |
| **Wildlife Habitat:**<br>- To maintain broad forest cover features that supply characteristics necessary for maintaining caribou and marten range occupancy.<br>**Targets:**<br>Caribou<br>- Ensure a mosaic of large disturbance blocks across the Forest and into the future is maintained and ensure there is connectivity between large blocks of | FMP is following caribou guidelines and has implemented improvements from the implementation of guidelines in the 1998 FMP. Improvements consist of extending rotation age for some blocks and partitioning some blocks to allow greater flexibility in guideline implementation. | Although caribou habitat is being managed in accordance with the targets, the Audit Team has concerns as to whether achievement of the habitat targets will be sufficient to maintain the caribou population. See discussion in section 3.3.6 and Recommendation # 6. |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| suitable caribou habitat through time both with the Ogoki Forest and beyond to adjacent forests.<br>- Continue survey programs to further identify areas of used caribou habitat on this Forest.<br>- Maintain at least 40% of the known winter habitat tracts on the Forest at any point over the initial cycling of the caribou habitat mosaic.<br>- Ensure harvested areas develop appropriate attributes to become suitable winter habitat (i.e. regenerate roads, maintain natural level of hardwood as suggested by OMNR Caribou guidelines).<br>- Develop operational prescriptions for shorelines of known caribou calving lakes and significant swamp areas to maintain the attributes required to support calving use. | | |
| Marten<br>**Targets:**<br>- Maintain at least 16-20% of the Forest that is capable of supporting marten populations in core areas of approximately 3,000-5,000 ha each with a majority of forest in suitable forest types.<br>- Spatially determine the location of these blocks over the next sixty years. | Implementation of FMP measures and modeling using the Ontario Marten Analyst indicate that 17.6% of the Forest will be maintained in marten cores (FMP, Figure 20). | |
| **Social and Economic Matters Objectives** | | |
| **Quality Wood Supply:**<br>- To provide in a cost effective manner, a continuous and predictable supply of timber to local mills, especially higher | The planned conifer harvest volume averages roughly 520,000 m3/year, and the planned hardwood volume averages 87,000 m3/year, which is about 3,000 m3/year below the lower | Company relations with the First Nations are reasonable but the failure of the three First Nations companies has been a severe disappointment to all concerned. The |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| quality sawlog material to the LLFP mills and ensure cost effective logging operations that meet SFL commitments.<br>**Targets:**<br>- Allocate enough areas to make available a minimum of 485,000 m3 conifer annually, the majority of which will be sawlog material for the LLFP and NFP sawmills.<br>- Allocate enough area to make available 90,000 to 104,000 m3 of poplar annually during the 2003-2008 period to be offered to KCI for use in their Terrace Bay mill and Longlac Wood Industries for their mill in Longlac.<br>- Continue to develop strategies for the increased utilization of larch, cedar, birch, and lower grade poplar.<br>- Ensure area is allocated by forest types that will allow for year round operations for all Company and third party operations on the Forest.<br>- Develop satellite camp locations for forest operations staff within 40 km of harvest areas while respecting all other forest values.<br>- Ensure that the wood supply does not fluctuate by more than 10% over any five-year term.<br>- Work with First Nation communities and businesses to help realize increased economic benefits from this forest for First Nations community members.<br>- Continue to offer harvest areas to forestry | end of the target range.<br>The planned future harvest volumes, as projected using SFMM, do not have a periodic variation of more than 10% in the selected management alternative.<br>The First Nations overlapping licensees harvested some wood during 2003-04 (Marten Falls cut 22,655 m3, Aroland cut 967 m3, and Eabametoong cut 0) but no operations took place in 2004-05. Marten Falls was prepared to harvest but the lack of resolution of past non-compliances led MNR to refuse to issue a licensee for the 2004-05 year. Nakina Heritage has been allocated and has harvested its full allowable amount during the past several years.<br>Significant salvage harvesting related to the snowdown event took place in 2003-04 but the neither the Company nor MNR have developed an operational assessment of the impact of the snowdown event or the extent of salvage opportunities still available. | relationship between MNR and the local First Nations has recently deteriorated.<br>A recent (June 2005) fire in the Gordon Creek area created operational difficulties for the Company since it had planned for a sizeable harvest from that area – the Company has revised its road building schedule so that it will have more operational flexibility in future years. |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| corporations owned by the three First Nations communities and the Nakina Heritage Corporation up to 50% of the total harvest level available in this plan.<br>• Ensure a balance of the age classes targeted for the next three terms are represented in the allocations of this plan.<br>• Assess salvage opportunities as a result of the Oct 24 Snow Down event and assess the impact on the forecast yield curves volume projections as a result of this storm. | | |
| Traditional Land Use Practices:<br>To protect the integrity of the Ogoki Forest land base to maintain the inherent social and economic benefits of traditional land use practices with particular emphasis on trapline management issues.<br>**Targets:**<br>• Develop a communication strategy that will address the concerns expressed by First Nations communities about the need to better communicate the Forest Management Planning Process.<br>• Ensure that all identified values associated with traditional land use practices are dealt with in the Forest Management Planning Process.<br>• Protect cultural and heritage values in the forest where identified by First Nation's people or identified by MNR.<br>• Plan allocation and the Caribou Habitat Mosaic so that no more than 50% of a registered trapline area is harvested in any | The Company and MNR were given maps of First Nations values that are used to assist in planning harvest allocations that do not damage First Nations values. In addition, through community information sessions and communication via the Community Education Protocol, new values were revealed. The Company approached individual trappers to discuss harvest allocations and ways of mitigating impacts on traplines. AOC's are used to protect trails, structures and other types of traditional use values. | |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| 40 year period.<br>• Protect all known structures used by local trappers. | | |
| Commercial Tourism:<br>To preserve the integrity of the Ogoki Forest as a remote tourism value at the landscape and operational levels by planning forestry operations that maintain the economic viability of the existing remote tourism industry.<br>**Targets**:<br>• Develop forest operations strategies and access strategies that promote the maintenance of the wilderness experience as well as fishing and hinting opportunities for the guests of the Remote Tourism businesses.<br>• Develop a negotiated area that each effected remote tourism business specific to each designated lake in which there are no publicly used roads that may allow for unauthorized access to the lake.<br>• Negotiate MNR-approved RSAs with all affected tourist operators. At a minimum, AOC prescriptions will be developed jointly with all affected tourist operators. | The road access restrictions described below, as well as the active road abandonment program, are expected to reduce negative impacts of operations on the character of the Forest. The Company offered to negotiate RSA's with tourism operators during the preparation of the 2003 FMP but it is only in the last year or so that RSA negotiations have commenced with several outfitters – as of the date of the audit site visit, no RSA's had been signed. | Maintenance of the remote tourism industry on the Ogoki Forest is a key goal of forest management, and there is licence condition which provided direction to negotiate a memorandum of understanding with the local tourism outfitter association (the licence condition was effectively met). |
| Recreational Opportunities:<br>To ensure some portions of the Forest are available and promoted for public use of non-commercial road-based recreational activities such as hunting, fishing, and berry picking and to minimize and mitigate negative impacts on existing traditional canoe and boating routes, campsites and portage trails by forestry operations. | The issue of road access to the Ogoki Forest was aired during the preparation of the 2003 FMP and while the road access restrictions were viewed with considerable negativity by a segment of local residents, the LCC, MNR and Company felt that the benefits of continuing to restrict access outweighed the loss of welfare due to the restriction, and the access restrictions were left unchanged during the | The Company has done a credible job in minimizing negative impacts of operations of remote tourism outfitters on the Forest, although some outfitters do not share this opinion. The Company has proactively tried to engage outfitters and reach agreements on operational parameters to minimize negative impacts. |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| **Targets:**<br>- Ensure the general public is aware of all opportunities and restrictions on the Forest with regard to areas available for road-based recreation.<br>- Through the FMP process promote public and stakeholder awareness and discussion of the issue of public use of forestry roads on this Forest.<br>- Ensure there is no net loss of campsite/portage quality due to forest operations.<br>- Maintain viewscape aesthetics along used canoe routes and used camping sites. | 2003-08 plan period.<br>The MNR posted maps of the Ogoki Forest showing available access in the public entrance to the Area Office, but a renovation of the entrance has forced the removal of these maps.<br>To protect campsite and portage quality, AOCs were developed for those sites that could be impacted by harvest operations, and viewscape maintenance was provided along canoe routes and tourism lakes. | |
| **Silviculture** | | |
| Silviculture:<br>To practice effective forest harvest, renewal and maintenance practices on all allocated areas using the best current knowledge and technology to ensure the achievement of other objectives.<br>**Targets:**<br>- Minimize the productive forest area lost to roads and long-term NSR land class.<br>- Practice appropriately intensive silviculture practices to ensure a wood supply that will meet future mill demand<br>- Develop a classification of the Forest that will describe Forest Units and utilize NW region eco-site descriptions.<br>- Estimate growth and yield curves specific to the Ogoki Forest. | - Loss of productive forest land has been reduced by improved harvesting practices that have reduced soil disturbance due to rutting; some tertiary roads in cut blocks have been regenerated by the Company (2003 FMP target is for 50% of tertiary roads to be regenerated). The Company is tracking the planting projects on roads in their GIS to evaluate achievement of the target.<br>- For the 1998 and 2003 FMPs, 44% and 43% of the total planned renewal program is by tree planting, with less reliance on seeding at 11% and 16% respectively. For the 1998 FMP period, the Company achieved 81% of the planned amount of tree planting, and 102% of the planned seeding, for a total achievement of 85% of | The Company has made good progress in meeting this objective; however, shortfalls in the renewal program will have to be addressed in the remainder of the 2003-2008 FMP term. |

| Objective/Targets | Achievements | Explanation |
|---|---|---|
| • Determine impact of October 24 snowdown event on the timber yields both in the short and long term.<br>• Use chemical herbicides only when absolutely necessary to maintain the health of conifer plantations. | the artificial renewal program. For the year 2003/04, 78% of the planned tree planting and 28% of the seeding was achieved, however, harvest levels are less than planned, which reduced the area available for renewal. For the remainder of the 2003 FMP period the Company has planned to increase the tree planting and seeding programs to make up the shortfall. Seeding has been conducted with the Bracke seeder, which improves spacing control of the crop trees on these projects.<br>• A new FRI became available in 2000 and was used in the preparation of the 2003 FMP. This inventory includes descriptions of the Northwest ecosites for each forest stand, which assist in describing forest units and are used in the development of silvicultural prescriptions.<br>• Chemical herbicides have not been used during the audit period. The audit field assessments indicated that some sites will require tending within the 2003 FMP period to ensure the survival and growth of conifer crop species. | |

For the forest diversity and forest cover objectives associated with the 2003 FMP, the Audit Team has identified concerns regarding some components (natural disturbance rates and maintenance of caribou) on the Forest. These concerns do not relate so much to the achievement of the plan's objectives, but the appropriateness of the objectives themselves. Furthermore, the Audit Team has concerns regarding the achievement of old growth targets, discussed in more detail below. Indications are that the First Nations aspects of the social and economic objectives for the 2003 FMP will continue to be challenging. Implementation of measures to achieve the tourism and recreational opportunities objectives appear to be on target.

### Old Forest

One of the 2003 plan's identified targets for Forest Diversity and Cover is to "maintain a representative percentage of old growth forest for each of the forest units at year 100". Old forest areas are important features of the Forest as they provide habitat for several high profile wildlife species, and are important aspects of the forest's ecological character. For the 2003 FMP, old growth targets for each forest unit were set based on onset ages identified in MNR's Old Growth Definitions document[13] (with some minor adjustments), and the estimated ranges of old growth present on the Forest as determined by the null or natural benchmark model from SFMM. Although discussion in section 3.3.6 suggests that greater direction is required in identifying benchmark natural disturbance rates, which will influence estimates of the amount of "natural" old growth present on the Forest, within the context of the natural disturbance rates used in the 2003 FMP, the Audit Team believes that the old growth targets were set in a defensible and thoughtful manner.

Table FMP-12 identifies the amount of old growth predicted to be on the Forest over time, through implementation of the selected management alternative and provides a basis for examining how well the plan's target is achieved. Figure 11 shows how well the old growth targets are predicted to be achieved in 100 years in the selected management alternative. From Figure 11, it is apparent that the level of old growth achievement approaches the mid-point of the target ranges for only two of the eight forest units. For four forest units, the level of achievement is at the lower end of the range, and for two forest units, the level of achievement is below the target range. Company staff pointed out that one factor contributing to the below-target achievement for the PjPur forest unit is that the trees which will be planted through aggressive efforts to increase the representation of this forest unit (the PjPur forest unit is predicted to increase in area from approx. 58,000 ha in 2003 to approx. 117,000 ha in 2103) will not be old enough to contribute to "old forest". The Audit Team accepts this as a contributing factor, but we note, that of the 117,000 ha of PjPur predicted to be on the forest in 2103, only 135 ha are predicted to be old growth, and we believe that a higher level of presence of old forest should be possible through a modest planning effort.

The reason for identifying a range of acceptable targets is to represent the uncertainty in estimates which are based on a variety of ecological factors, and to capture the range of natural variation. The Audit Team believes that, across the forest units, the tendency should be toward the mid-point of the ranges, not toward the lower end, as is the present case. Providing a target range should not be intended to validate consistent achievement of the lower end of the range. This is somewhat of a difficult concept to capture in a recommendation and the Audit Team recognizes that there will be some subjectivity in assessing whether the intent of such a recommendation is achieved. Nonetheless, Recommendation # 31 is identified to attempt to see that old growth targets for the Forest are achieved well.

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[13] Uhlig, P., A. Harris, G. Craig, C. Bowling, B. Chambers, B. Naylor, and G. Beemer. 2001. Old growth forest definitions for Ontario. Ontario Ministry of Natural Resources. Queen's Printer for Ontario. Toronto. 53 p.

**Recommendation # 31**

**The planning team for the 2008 plan should ensure that predicted old growth achievement will be in the target range for all forest units. The planning team should also ensure that the achievement of old growth targets tends towards the mid-point of identified acceptable ranges, rather than towards the lower end.**

Although it may seem somewhat academic to be concerned about old growth forest 100 years in the future, the management practices of today will greatly influence the nature of the Forest a century down the road, and so, it is important to incorporate such concerns and targets into today's management plans.

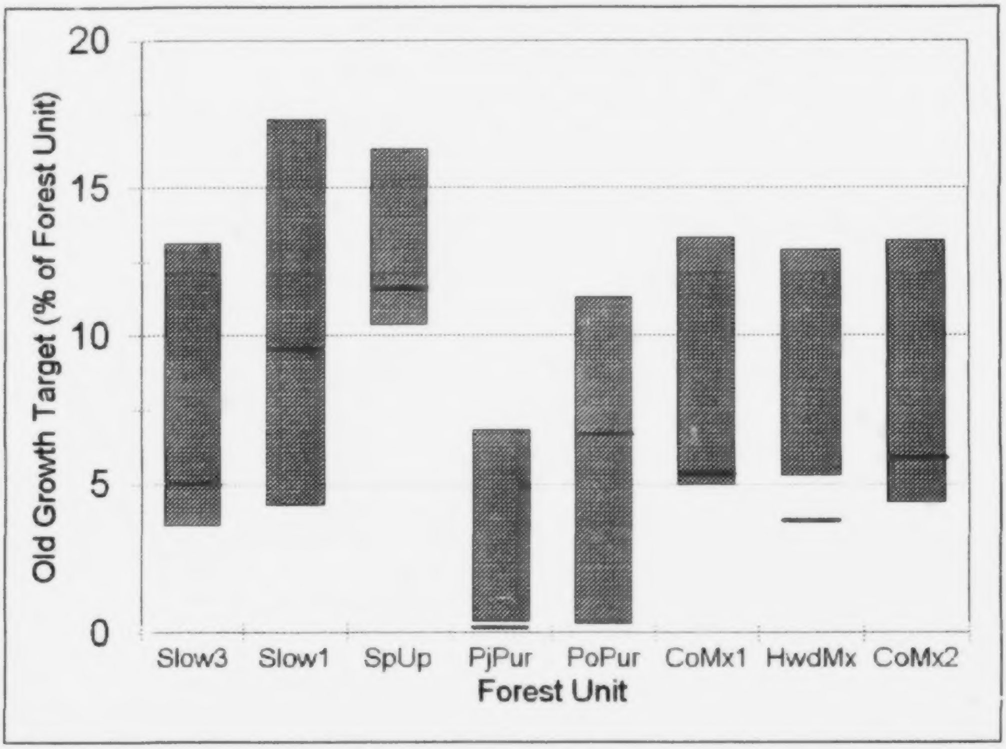

**Figure 11.** **Comparison of old growth targets (red bars) identified in the 2003 FMP to the level of old growth predicted to be on the Forest in 2103 (blue lines) under implementation of the selected management alternative.**

### 3.7.2 *Review of the Trend Analysis of Planned vs. Actual Forest Operations*

The IFAPP requires that this assessment of sustainability review the Trend Analysis, which is included as Appendix A of this report. The Trend Analysis is prepared by the forest manager and is intended to identify significant trends in the management of the Forest. The Trend Analysis for this Audit was prepared in accordance with the requirements of the IFAPP.

#### Forest Area and Composition

Table 1 of the Trend Analysis shows a decrease in the Crown managed forest from 819,146 ha to 746,500 ha from 1998 (combined former Nakina North and Ogoki) to 2003. The decrease is attributable partly to the creation of 4 new protected areas through the Ontario Living Legacy process, and a new forest inventory delivered in 2000. Although not explicitly stated in the Trend Analysis, a portion of the decline is also due to the somewhat ambiguous manner in which Crown forest area is tracked, as discussed more in Section 3.7.3. Recommendation # 32 directs the Company to revise the manner in which this indicator is tracked to allow for a clearer interpretation of trends in Crown forest area. The discussion of information presented in Table 1 also identifies the following:

- The are of protection forest has increased substantially from 1998 to 2003 as a result of the new inventory;
- The area of depleted stands increased as a result of forest harvesting which began in 1998, and fires and blowdown events; and
- Decreases in the area of the white birch, jack pine, spruce and poplar working groups are associated with the new inventory.

Because of changes associated with the new inventory and the unintentionally misleading manner in which Crown forest is accounted for by the Company, trends in forest area and composition cannot be determined with any precision.

#### Harvest

Section 4 of the Trend Analysis and its Tables 3a and 3b compare the planned vs. actual harvest volumes. As noted in section 3.4.2 of this report, there is a marked difference in the planned vs. actual normal (i.e. not including salvage) harvest for the Forest over the audit period due to the high level of salvage associated with the snowdown event. The explanation provided in the Trend Analysis is very detailed. Although normal harvest levels were lower than planned, salvage levels were substantially higher than planned. For example, only 68% of the planned normal conifer harvest volume was achieved during the 1998-2003 period, however almost five times as much salvage was carried out compared to planned. The total (i.e. normal plus salvage) actual conifer harvest volume for that period was 105% of the planned levels. A similar trend, of higher than planned conifer salvage, and less than planned normal harvest is apparent for the first year (all for which data are available) of the 2003-2008 period.

For hardwoods, the story is somewhat different. The actual harvest levels are considerably lower than planned and no salvage harvesting of hardwoods was done - although salvage harvesting took place in hardwood forest units, only the conifer volume was removed as salvage. The Trend Analysis reviews the hardwood utilization issue, which has been discussed in Section 3.4.2 of this report.

Section 5 of the Trend Analysis and its Table 4 summarize depletion areas. Not surprisingly the trend for depletion area is the same as that for harvest volume – lower than planned normal depletion area and higher than planned salvage.

The Trend Analysis notes the following general trends regarding volume utilization and depletion:

- "Volume utilization from both normal harvest and salvage harvest areas has improved during the IFA period, particularly for poplar.

- Normal volume harvest levels will continue to rebound to annual planned volume as operations in salvage harvest areas decrease.

- The high percentage of the timber volume from the snowdown salvage operations is still marketable but the utilization of the timber is becoming increasingly difficult due to the length of time that has passed since the event occurred. The utilization is expected to decrease rapidly as the product quality declines over time. The Company is now concerned with the increase of insects, in particular the white-spotted sawyer beetle, which is affecting adjacent forests that were affected by the same snowdown event.

- The high demand for conifer products continues to result in conifer dominated areas having a higher percentage of harvest.

- Previous difficulties in marketing poplar timber are essentially non-existent and these areas are readily harvested. White birch, however, continues to be the least marketable of the major commercial species and, as such, white birch dominated areas tend not to be harvested unless there is a significant proportion of other species associated with them (such as poplar or spruce).

- In the four years since the October 2001 snowdown event, salvage operations have occurred on over 9,131.5 hectares (not including salvage area harvested during 2004-2005). Although this is a small percentage relative to the gross area affected by the snowdown event, LLFP continually attempts to address all damaged areas in conjunction with harvesting normal allocations.

- It is expected that normal harvest area operations will rebound to planned annual area levels as snowdown timber quality decreases and salvage operations decline."

The extraordinary circumstances regarding the snowdown event and the lack of a long history of management of the Forest make it difficult to determine trends in harvest volumes and areas. The Company's tabulation of information and text on the metrics in the Trend Analysis are well considered and accurate.

### Silviculture

Section 7 and Table 6 of the Trend Analysis describe renewal, tending and protection operations. The Trend Analysis documents that natural regeneration was considerably lower than planned (10%). However, as described in Section 3.4.6, this is a function of the manner in which natural regeneration is reported, rather than true regeneration failure. Recommendation # 17 directs the Company to revise the manner in which it reports on natural regeneration.

Section 3.4.6 and Table 8 of this report discuss silvicultural achievements. The level of achievements (planned vs. actual) reported in Table 8 differs from Table 6 of the Trend Analysis because Table 8 documents silvicultural achievements relative to achieved harvest levels in order to present a more refined basis for assessing silvicultural accomplishments. As noted in Section 3.4.6, artificial regeneration achieved is somewhat less than planned, with the exception of seeding (91% for planting, 114% for seeding, and 73.5% for mechanical site preparation) for the period 1998-2003. The Trend Analysis attributes part of the reason for underachievement to the inaccuracy of the Ogoki Forest FRI, in particular the area portion of the FRI. As noted in the Trend Analysis, it was determined and is documented in the annual reports and letters that the area on the maps is incorrect and generally higher than the actual area in the stand. Since all of the planning occurred using the area identified on the maps, any forecasts using this area would be greater than the actual area treated.

In general, achievements for planting and site preparation are acceptable. The low level of accomplishment for site preparation is attributed in the Trend Analysis to the fact that these operations did not commence until the spring/summer of 2000.

The Trend Analysis identifies the following trends regarding silviculture:

- "Natural regeneration continues to be relied upon for hardwoods (predominantly Poplar/Aspen forest units) and the Spruce lowland sites, while the majority of conifer regeneration on upland sites is accomplished through artificial means. Natural regeneration is generally not reported on until one year following harvest to facilitate more accurate mapping of actual depletion areas (aerial photography is acquired the following fiscal year), and to verify silvicultural post-harvest treatment prescriptions.
- Spruce and jack pine continue to be the dominant conifer species artificially regenerated.
- More attention is being directed to managing for mixedwood future forest types (mixed conifer and spruce and poplar mixedwoods), as opposed to consistently striving for pure conifer plantations."

### Regeneration

The Trend Analysis reports that no free-to-grow surveys were required nor implemented during the audit period, since the first natural regeneration projects on the Forest occurred in 1999 and the first artificial regeneration projects occurred in 2001.

Earlier in this report, we noted that LLFP has developed an excellent monitoring program to support its silviculture program and to evaluate effectiveness. Field surveys, both formal and informal, are conducted at various stages in the management of a stand.

We believe that the assessment methodology is well-designed, flexible, and makes use of appropriate information technology, and that the surveys are well-integrated with the

Company's mapping and reporting system.

The Trend Analysis is a well-developed document, and meets the requirements of the IFAPP. However, because the snowdown event has had such an impact on the management of the Forest, and because active operations have only been conducted since 1998, the trends identified in the document, although informative, do not cover a sufficiently long period of time to be useful in assessing the sustainability of management of the Forest.

### *3.7.3 Review of RPFO Assessment of Sustainability*

The RPFO prepared for the 2003 FMP does not contain an assessment of sustainability as there were no forest management operations in the period it covers. As noted earlier, the preliminary RPFO prepared for the 2008 plan has not yet been reviewed by MNR staff, and so is considered a draft document. Nonetheless, we provide a brief assessment of its review of sustainability with the caveat that any changes undertaken as a result of MNR's review may render the observations here immaterial.

The RPFO notes that it is not possible to compare the amount of Crown forest available for timber production by forest unit as required by Table RPFO-13, because changes in the inventory techniques and forest unit classification used in the current and previous plans would make the comparison inaccurate. It is possible, however, to compare the total Crown forest area available at different periods, and this is what Table RPFO-14 does. The table shows a marked decline in forest area from 1998 to 2003 from 781,668 ha to 746, 939 ha – a decline of 4.5%, and a projected decline in area in 100 years to 597,013, a decline of almost 24%. A similar decline is noted in Table FMP-3. The RPFO notes that the decline is a function of forest being made into permanent roadbed, and the removal of area "to protect or enhance non-timber values". Although losses attributable to roads are real, the loss for protection of non-timber values is an artefact of the accounting method used by the Company. The Company's approach is that when a block is harvested, the area in reserves associated with the block (i.e. AOCs) is subtracted from the Crown forest area and is considered to be "lost" to the Crown forest area in perpetuity. This makes the indicators portrayed in these tables essentially useless because one cannot determine the area of forest turned into non-forest (through roads and the creation of barren and scattered lands), which is really what this indicator is intended to reveal. Therefore, the Audit Team is recommending that the Company change its accounting for Crown forest lands associated with AOCs. The information contained in Table RPFO-14 under the 1996 FMPM is to be contained in Table AR-17 under the 2004 FMPM.

**Recommendation # 32**

**The Company should revise the way it accounts for managed Crown forest area, so that area associated with AOCs and reserves is not removed from the area of Crown managed forest.**

Table RPFO-15 (Summary Report of Landscape Pattern or Forest Diversity Indices) is not included in the RPFO, nor is there any discussion of the indicators to be summarized in this table. A comparable table is not included in the Annual Reports that will be prepared under the 2004 FMPM, so we conclude that the metrics to be summarized in the table were not seen to be overly useful. Nonetheless, the RPFO should at least make mention of the table and explain why the indicators are not summarized.

Table RPFO-16 is intended to report on the habitat for "selected" wildlife species. It is our understanding that the species identified in this table should be the same as those listed in Table FMP-5 (Habitat for selected wildlife species). The submitted Table RPFO-16 reports only on a subset of these species (caribou, moose and marten). A table comparable to RPFO-16 is included as Table AR-19 under the 2004 FMPM. Inventory and habitat definition differences between the former Nakina North and Ogoki forests prior to their amalgamation make data synthesis even for the limited subset of species problematic, so no trend can be identified.

**Suggestion # 15**

**The Company should ensure that wildlife species reported upon in Table AR-19 are the same as those identified in Table FMP-5.**

Table RPFO-17 reports on water yield and watershed disturbance. The values for the metrics identified in the table are within acceptable ranges. We note that there is no comparable table identified for the Annual Reports in the 2004 FMPM, and so we conclude that the metrics summarized in the table were not seen to be useful.

Table RPFO-18 is intended to provide a summary of several measures of forest sustainability, however because operations have only been conducted on the Forest for a relatively short period, it is not possible to infer any meaningful interpretation of the information provided.

In summary, the assessment of sustainability provided by the RPFO is of limited utility for the following reasons:

- Operations have been conducted on the Forest for only a short period of time, so trends are not apparent;
- Changes in the inventory and definition of forest units between 1998 and 2003 make it difficult to compare the forests of the two units over the time period; and
- Two RPFO tables were filled out either incorrectly or incompletely and their analyses is, therefore, not instructive.

### *3.7.4 Conclusions Regarding Sustainability*

Several factors impinge on our ability to assess the sustainability of management of the Ogoki Forest:

- There is minimal information on whether the snowdown event will have negative impacts on the future growth and yield of damaged stands;
- Operations on the Forest have only been conducted for a relatively short time, making it difficult to draw upon management history to aid in the assessment;
- The Trend Analysis, although well-developed is not really useful in assessing sustainability largely for the above reasons;
- Changes in the inventory between 1998 and 2003 make it difficult to compare the forests of the two units over the time period; and
- Two RPFO tables were filled out either incorrectly or incompletely and their analyses is, therefore, not instructive.

- The objectives of the 1998 plan were largely subjective, providing an inadequate basis upon which to draw conclusions regarding sustainability.

Notwithstanding these issues, the Audit Team draws upon the following observations and findings to draw its conclusion regarding sustainability:

- Adherence to the terms and conditions of the SFL;
- Adherence to the required forest management manuals and guides;
- The existence of an excellent silvicultural monitoring program;
- A marked improvement in the standard of field operations since the previous IFA;
- The existence of a highly functional LCC;
- The high level of personal dedication and professionalism of Company and MNR staff; and
- The Audit Team's general good impression of management of the Forest.

Therefore, we conclude that the Forest is being managed within the bounds of sustainability.

Notwithstanding this positive assessment, the Audit Team has identified several issues which we believe must be addressed in order for management to remain on a sustainable track. These include:

- Determining the impact of the snowdown event and incorporating its effects into future management;
- Resolving the management and objectives of old forest and caribou on the unit; and
- Continued effort to strive for meaningful First Nations participation and benefit from management of the Forest.

## 3.8 CONTRACTUAL OBLIGATIONS

### *3.8.1 Payments to the Crown*

The Audit Team reviewed a sample of the documentation for payments related to area charges, Forestry Futures dues and Crown stumpage charges and found that payments were generally in order. The exception is that as of October 17, 2005, Marten Falls Forest Development Corporation owed the provincial government (Minister of Finance) $4,750.38 in unpaid Crown dues and the forest renewal trust (Royal Trust) a total of $2,191.07 on wood harvested during the audit period. Most of the amounts owing were related to wood harvested in the 2000 – 2003 period. District MNR has informed Marten Falls that these amounts must either be re-paid before the community resumes harvest operations on the Forest, or the community (or its associated harvest company) must provide a written commitment to pay these amounts, as well as a plan describing how these payments will be made if harvesting operations resume. The Audit Team supports this approach.

### *3.8.2 Wood Supply Commitments (Appendix E)*

There were three requirements related to the supply of timber in Appendix E of the version of SFL #541965 that was dated June 4, 2004. Two of these requirements have been carried over from the two previous licences – SFL # 541980 for the Nakina North

Forest and the licence for the pre-amalgamation Ogoki Forest.

The first commitment was to make available all poplar harvested from the unit to Longlac Wood Industries (LWI) and Neenah Paper (formerly Kimberly Clark Inc). During the first four years of the audit period, roughly 88% of the poplar harvested went to the two companies in question. As described in section 3.4.2, the relationship between Neenah Paper and LLFP is good and there is the required memorandum of agreement in place. Relations between LWI and LLFP are more competitive, although there are signs of improvement recently. LWI staff indicated that in 2003-04, they felt they finally received an appropriate volume of hardwood from the Ogoki Forest. The Audit Team anticipates that once the potential changes in the hardwood industrial use in the area around Lake Nipigon have been resolved, relations between the two companies may improve further and the required MOA, which has been developed, will be signed.

The second commitment is for 242,000 m3 of conifer to be delivered annually to the Nakina Forest Products mill in Nakina. (Nakina Forest Products is a component company of the Buchanan Group and so is a sister mill to Long Lake Forest Products' Longlac mill.) The volume portion of this commitment was only met in 2003-04, with the volumes in prior years being substantially lower, but the Nakina mill also increased its use of wood from other sources, and so this is not seen as being an issue.

The more important commitment in the Ogoki Forest SFL regarding conifer is that all conifer from the Forest be processed at either the Nakina or Longlac mill. According to the Annual Reports, 86% of the conifer volume harvested on the Ogoki and Nakina North Forests in the 1998 FMP period was processed at the two local Company mills. In 2003-04, 75% of the conifer harvest volume was processed at these mills. In the previous audit period, there was some transport of wood from the Ogoki Forest to Buchanan mills in Thunder Bay that violated the terms of the licence agreement, but during the current audit period, the Company adhered to the licence requirement for local processing. Conifer logs that are too large for the Nakina or Longlac mills are processed elsewhere, but other conifer that is processed elsewhere is traded for conifer sourced from other Forests that is processed at the two local mills. The arrangement with Neenah Paper is an example of a mutually beneficial agreement.

### *3.8.3 Special Licence Conditions (Appendix F)*

The Nakina North SFL (SFL # 541980) that was in force up to March 17, 2004 contained three special conditions. The first of these contained two parts, the first of which was related to overlapping licensees. The Company was directed to make harvesting opportunities available to Aroland First Nation and the Township of Nakina Corporation (Nakina Heritage Corporation), for amounts of timber that would be phased in up to a maximum of 50% of the total harvest from the licence. During the first three years of the audit period, an average annual volume of 35,000 $m^3$ of conifer and hardwood was allocated to each, representing in total 32% of the total harvest volume. Aroland First Nation actually harvested timber in two of the three years, cutting a total of 5,514 $m^3$. In contrast, the Nakina Heritage Corporation harvested a total of 112,000 $m^3$ during the first three years of the audit period, or an average of 37,500 $m^3$/year.

A similar condition was contained in the SFL for the original, smaller Ogoki Forest (SFL # 541965 dated February 14, 1996), pertaining to Marten Falls First Nation and

Eabametoong (Fort Hope) First Nations. During the April 1, 2000 – March 31, 2003 period, Eabametoong harvested a total of almost 63,000 m$^3$, while Marten Falls harvested roughly 57,000 m$^3$, as can be seen in Table 12. As was the case for the Nakina North SFL, this condition was carried through into the new Ogoki SFL in a manner that maintained the maximum potential timber harvest volumes available to each overlapping licensee.

In general, these licence conditions were met in that timber harvest opportunities were made available to each of the four overlapping licensees, but Nakina Heritage Corp (NHC) has been the only one to harvest near the available maximum. The 2000-01 year was a start-up year, with NHC's first licence being issued in May 2000. In that year, and each of the subsequent two years, the total volume allocated to NHC exceeded the maximum stipulated in the SFL requirement (approx 54,700 m$^3$/yr) however NHC was unable to harvest the full amount. Factors such as snowdown losses, by-pass and inability to harvest or haul at the appropriate season are factors, as well as the high relative proportion of hardwood in NHC's three allocations in those years. In 2000-01, NHC's allocation contained 54% hardwood, while the proportion was about 30% in each of the two following years.

**Table 12. Summary of Overlapping Licensee Harvest Volume in the Audit Period (m$^3$)**

| Year | Nakina Heritage Corp | Eabametoong First Nation | Marten Falls First Nation | Aroland First Nation | SUM |
|---|---|---|---|---|---|
| 2000/01 | 28197 | 0 | 8774 | 444 | 37415 |
| 2001/02 | 40247 | 38367 | 18537 | 5070 | 102221 |
| 2002/03 | 43502 | 24417 | 29577 | 0 | 97496 |
| 2003/04 | 40874 | 0 | 22655 | 967 | 64496 |
| Average | 38205 | 15696 | 19886 | 1620 | 75407 |

The harvest conditions for the four overlapping licensees were maintained in the SFL for the amalgamated Ogoki Forest (i.e. SFL 541965 effective March 18, 2004), with the maximum volumes, rather than percentages, being carried over from the pre-amalgamated forests. In 2003-04, the most recent year for which there is data, NHC harvested some 41,000 m$^3$ while Aroland cut just less than 1,000 m$^3$. Eabametoong did not harvest while Marten Falls harvested 22,655 m$^3$.

NHC stands out as being the overlapping licensee that has been best able to harvest its allocation, making allowances for the various obstacles that have prevented it from reaching its full allocation. To make up a portion of the difference between the allocated volume and the actual volume harvested, LLFP offered NHC "Stump-to-Dump" contracts, which cover operations from felling through to delivery at the mill.

It would appear that NHC is ready to make another step in its development as a harvest contractor, and would benefit from having a multi-year licence. This would add a level of complexity to operational planning and would stimulate the growth of the operation; if there is concern that a change in the business situation at NHC might leave the Company exposed, a two-year rolling licence, that is renewed annually for two-year term, might represent a fair balance.

**Suggestion # 16**

**MNR, with the Company's agreement, should offer multi-year overlapping licences to Nakina Heritage Corp as long as NHC's performance warrants.**

The second part of the special condition #1 in both of the former Nakina North and Ogoki SFLs (carried over in the SFL for the current Ogoki Forest) stipulated that the Company was required to "work with local native communities to develop a "Native Recruitment, Training & Employment Strategy". In addition, Long Lake Forest Products Inc. will provide a "Strategy for Creating Business Opportunities for Natives" which could include contracting for wood harvesting, investing in equipment for independent contractors, management training, entering into service contracts for such things as road maintenance and silviculture, funding the development of skills/ capability for native resource management.

The three First Nations each formed forestry corporations which focused primarily on harvesting operations but also had involvement in aspects of silviculture operations on the Ogoki Forest. In addition, a management advisory company called Three Nations Management Inc. (TNMI) was formed to provide a liaison between the First Nations, their stakeholders and MNR, to provide training opportunities to First Nations members, to provide accounting and administrative services, and direction regarding technical compliance issues (NW Training & Development, March 2005)[14]. The Board of TNMI consisted of a representative from each First Nation and three representatives from LLFP. The Company provided $500,000 to help set up and operate TNMI. In the 2000 IFA, the auditors noted that the First Nations did not fully trust the Company but that TNMI was actively working to develop business plans for each community, except for Eabametoong, which was pursuing the development of a business plan through Matawa First Nation Management Inc.

Unfortunately, none of the First Nations harvesting companies met expectations. Eabametoong harvested wood as an overlapping licensee in 2001/02 and 2002/03 and then surrendered their licence. LLFP offered to have Fort Hope work as a contractor, and Fort Hope accepted. Aroland First Nation harvested relatively small volumes sporadically during the audit period, and was the only OL besides NHC that tried to harvest wood in 2004-05. Of the three First Nations, Marten Falls was the most consistent, harvesting about 20,000 $m^3$/year during the first four years of the audit period. (For overlapping licensee harvest data, see report section 3.4.2 Harvest Operations.) However, at the time of the site visit in August 2005, none of the three First Nations had indicated it would attempt to renew harvest operations on the Ogoki. The three First Nations, the Company, and MNR were all frustrated by the situation; MNR and the Company had each made a substantial effort to help the First Nations companies develop and prosper, while the First Nations found themselves in debt and facing even greater obstacles to business formation.

In October 2005, Aroland, Marten Falls and Eabametoong renewed their interest in conducting harvest operations, indicating how fluid and opaque the situation is. However, it is not clear what has changed and there is no indication that the operations will be more successful than previous ones, although one would like to be optimistic.

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[14] *Forestry Operations Review and Evaluation for Eabametoong and Marten Falls.*

LLFP has indicated a willingness to discuss opportunities for First Nations to participate through direct employment and/or contracting in various aspects of forest harvesting and silviculture operations, and this might be a more appropriate step until a greater depth of experience has been gained. On the other hand, the First Nations indicated that the volumes available to each community are insufficient to support a profitable operation.

A review of the performance of TNMI (NW Training & Development, March 2005) was commissioned by Matawa First Nations Management to examine the problems that arose in the First Nations harvesting enterprises. The review found that the First Nations capacity needs were greater than originally expected, and there were issues related to governance, communication, and lack of technical and financial management capability. A factor that caused one of the companies to get off to a bad start was a bush accident which killed one First Nations person and led to unsafe labour practice charges and a fine against the First Nations harvesting company. The net result is that the three harvesting companies each failed and the First Nations have significant debts to pay.

Although the harvesting companies have encountered difficulties, there have been more successful results in silviculture and contracting. LLFP requires that each silviculture contractor must provide opportunities to First Nations members from Fort Hope, Marten Falls and Aroland, and there has been some uptake. There have been both successes and disappointments in recruiting tree planters from the communities each spring. In 2005, after many years of varying success, LLFP worked with a First Nation member from Fort Hope who managed a 14-person planting crew from Fort Hope which successfully completed their contract. The Company's SIP contractor employed and trained one to two First Nation members (from Fort Hope in particular) to operate the SIP equipment each year for the past five years. First Nation members from each community, especially Aroland, have had success at cone picking on the Ogoki Forest.

LLFP has also supported the start-up of a Fort Hope delimber contractor, who has worked on the Ogoki Forest for several years, and is now also working on other areas BFP manages.

Finally, the Company usually hires one or two First Nations summer students each year, and there are four or five First Nations people who are full time forestry technicians and operators with LLFP or within the larger Buchanan Group. In addition to field employment, the majority of the employees (roughly 85%) at the LLFP's Longlac mill are First Nations people, as are roughly 10% of the employees at the Nakina mill.

The Company has made solid efforts to support the development of business relationships with the First Nations, and on the ground level, Company staff went out of their way to assist the First Nations companies. MNR has also been supportive of First Nations participation. There have been many areas where there have been reasonable successes, while the harvesting companies have not performed well. It appears that First Nations individuals may have developed the capacity to provide reliable field employment, and the delimber operator appears to have successfully launched his business. However, capacity remains an area where more development is required, which is a painstakingly slow process that is often characterized by as many discouragements as successes. Another factor that has contributed to the difficulties experienced by the First Nations community logging ventures is that the volumes that are available under the licence to each individual First Nation community limit the scope of the business that can be supported. MFFDC was able to harvest 20 – 25,000 $m^3$/yr for three years, but could not survive. The First Nations communities are now further disadvantaged by the debt that they have accumulated from their previous ventures. On the other hand, NHC has obviously been able to find a successful approach and may provide a suitable template for the First Nations communities to consider. The following recommendation enjoins all parties to not become discouraged, and to continue their efforts to enable First Nations to participate and benefit from involvement in forest resource management. MNR pointed that because it was not represented on the TNMI Board, it was limited in its ability to provide support and advice. Recommendation # 33 also recognizes the value of having greater MNR participation.

**Recommendation # 33**

**The Company, MNR and the three First Nations should continue their efforts to develop First Nations forestry capacity. A revitalized effort to do this should be based on more modest goals for future operations.**

The second special licence condition requires LLFP to make best efforts to enter into an agreement with the Lakes of Legends Tourism Association to establish major business principles that will provide for the co-existence of the remote tourism industry with the forest products industry. As the previous IFA identified, this condition had been met prior to the audit term – an agreement between both parties was achieved but it remained unsigned, which appeared to suit both parties.

The third special licence condition was also met prior to the audit period – a Board of Direction was established and met relatively regularly while the licence and business plan were being developed, but it has rarely met during the audit period. This appeared to be consistent with people's expectations that the Board would assist during the start-up of operations but no real role was envisaged once things were up and running.

Both the second and third special conditions were transferred into the new Ogoki SFL, but since the conditions have both been met, it is unclear what purpose they serve in the current SFL. Interviewees stated that the Lakes of Legends Tourism Association had become more of a marketing organization, and with the advent of RSA's, the value of the old, unsigned agreement is diminishing fast. Similarly, no one that the Audit Team spoke to could recall when the Board of Direction had last met – it appeared to have been in 2002 or earlier – but there was no concern with this situation. Therefore, it seems that these two licence conditions no longer serve a useful purpose, hence the following recommendation is provided.

**Recommendation # 34**

**MNR, the Company and stakeholders associated with special licence conditions 2.0 and 3.0 should review these conditions and either amend them to update them or remove them from SFL #541965.**

### *3.8.4 Other Agreements*

One of the conditions of the Conditional Letter of Commitment for development of the Nakina North and Ogoki Forests, signed in June 1995, was that the Company would construct a garage complex and woodlands office in Geraldton by the summer of 1998.

This has not yet happened. The Company has purchased a tract of land just outside of Geraldton and on April 5, 2005, received notice from the town of Greenstone that all permits are in place for the development of the complex. However, the Company explained that money is very tight within the Company, due to severe pressure that the entire industry is experiencing. In these circumstances, the Company is not able to provide the capital to build the complex. The Company stated that its business plan continues to include the development of the complex but it is not clear when it will be developed.

The previous audit directed a recommendation towards the Company to encourage construction of the garage, but clearly little came of it. The Audit Team accepts the Company's contention that the current economic climate in the sector makes it difficult for the Company to proceed with the project at present, but this is one of the factors that was considered in awarding the Company the licences for the Nakina North and Ogoki Forests. It has been ten years since the original commitment was made. There is considerable skepticism within parts of the local community that the Company intends to honour its pledge, and there is concern on the part of the Audit Team that other Company priorities may continue to over-ride garage construction, in spite of the Company's intention of fulfilling it.

The Audit Team feels that MNR should step up the pressure on the Company to construct the garage and woodlands facility, or, if this no longer makes sense for the Company, the Company should admit this and undertake something else that will give equivalent or greater benefit to the community of Geraldton. If the Company was to avoid meeting its prior commitment, it would reflect badly on the Company and MNR.

**Recommendation # 35**

**The MNR Regional Director and Nipigon District Manager should meet with the Company to consider measures that would result in the Company meeting its commitment to construct the garage/ office complex in Geraldton within a specified time frame, or undertaking measures that are equivalent to this commitment.**

### *3.8.5 Previous Independent Forest Audit*

The previous IFA for the Nakina North and Ogoki Forests was conducted in autumn of 2000 (prior to the two forests being merged), and the final report was submitted April 13, 2001. The action plan addressing the audit's recommendations was due June 13, 2001, two months after the report was submitted. The plan was actually submitted in July and approved on August 9. The status report on implementation of the action plan was due on August 9, 2003, two years after approval of the action plan, and was delivered on August 13, 2003.

Table 13. Review of the implementation of recommendations made in the previous Independent Forest Audit.

| Recommendation | Actions Taken | Status |
|---|---|---|
| 1. The MNR, LLFP and the First Nations should develop appropriate mechanisms for the distribution and review of forest management planning information. The mechanisms should include a protocol for consultation with native trappers. | During the development of the 2003-2023 Ogoki FMP, the Community and Education Protocol was used by the directors of TNMI, the managers of the forestry corporations for the three communities and the planning team to guide contacts with those members of the communities impacted by the developing forest management plan. The Company and MNR also made a concerted and generally successful attempt to meet with all registered trappers and their families affected by proposed forestry operations. | Complete |
| 2. The MNR, LLFP, and the First Nations should develop one or more mechanisms for the on-going collection and updating of Native values information. | As stated in the status of Recommendation number 1, the Community Education Protocol was used to guide the efforts of collecting information on values found on the forest that may be impacted by forestry operations. The Native Background Information Report and the Report on the Protection of Identified Native Values were prepared according to the process outlined in the Forest Management Planning Manual. These documents are part of the approved 2003-2023 Ogoki Forest Management Plan. | Complete |
| 3. LLFP should work cooperatively with the First Nations to resolve issues related to First Nations participation in forestry activities on the Nakina North and Ogoki Forests, and should expedite the development of mutually agreeable strategies for 'Native Recruitment, Training and Employment' and for 'Creating Business Opportunities for Natives' as per the SFL special conditions. The MNR should offer to serve as a mediator if any parties are not satisfied with the rate of progress towards development of the strategies. | Three Nations Management Inc (TNMI) was the vehicle that was established to facilitate and support the development of First Nations forest operations, including timber harvest operations. As Table ZZ shows, Eabametoong and Aroland harvested timber in some years only, and Aroland's volumes were very low, while Marten Falls harvested a reasonable volume in the first four years of the audit. However, while these results indicate that a reasonable level of early success was achieved, none of the First Nations were harvesting timber at the time of the audit and the operations of the three companies appeared to be in disarray, as a lack of managerial capacity apparently caught up with the companies. Marten Falls, which appeared to have been the most successful of the three operations, was not issued a licence in 2005-06 because of outstanding poor practices and lack of progress in preventing further non-compliances. | While there was some early success, the three First Nations companies are all experiencing challenges and it is unclear whether, or in what form, the companies will re-emerge. This is long-term effort and the parties need to reconsider what improvements to their approaches need to be made in order for there to be more sustainable success. |

| Recommendation | Actions Taken | Status |
|---|---|---|
| 4. Corporate MNR and the Company should amend the SFL documents for both Forests so that they cite correct area figures. | The most recent licence has total Crown area of 10,335.3 sq. km and Crown Productive land of 8578.9 km 2. This is different from Table FMP-1, but as this portion of the licence document was updated recently (June 8/04), the area it cites is taken as more recent than the FMP table. | Complete |
| 5. The Company should revise the wording of the caribou management objective in the 2003 FMP so that it is consistent with the planned outcome of management. | Caribou related objective and targets have been revised, and one component of the target is now quantitative (i.e. "Maintain at least 40% of the known winter habitat tracts on the Forest at any point over the initial cycling of the caribou habitat mosaic…"). | Although the objective is clearer, the Audit Team still has concerns regarding caribou on the Forest (See Section 3.3.6) |
| 6. The objectives in the 2003 FMP should be quantitative and measurable. | Many targets now associated with objectives have quantitative components. | Complete |
| 7. Objectives in the 2003 FMP related to Native Economics and Socio-Economics should be specific and consistent with the special licence conditions related to these topics. | The objectives relating to Social and Economic Matters in the approved 2003 – 2023 Ogoki Forest Management Plan are consistent with the special conditions of the licence. The Quality Wood Supply objective speaks to the development and maintenance of viable harvesting operations for the 3rd party licensees where by the FMP will commit to availability of harvest levels up to 50% of the annual average total each year, that the area offered will allow for year round operations and that the Company will continue to work with First Nation communities and businesses to help realize increased economic benefits from this Forest for First Nation community members. | Complete |
| 8. In future plans Corporate and District MNR, and the Company should see that the socio-economic profile is developed with input from local and regional economic development offices and other knowledgeable people, and supplemented with more current data sources if required. The analysis of socio-economic impacts of management alternatives should be based both on SEIM analysis and | In the 2003 FMP, the socio-economic profile is much improved compared to the profiles found in the 1998 FMPs, especially with respect to description non-timber uses of the Forest. The investments and employment benefits of the mills are also described in good detail. The Company did not update demographic information (the demographic profile was based on 1996 Statistics Canada data) but improvement was shown nonetheless. | Complete |

| Recommendation | Actions Taken | Status |
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| local knowledge. | | |
| 9. In preparation for the 2003 FMP, the Ministry and the Company should review the rigidity with which the 100-year rotation schedule is being applied and examine the potential for silvicultural and ecological benefits associated with incorporating a variety of rotation times into the application of the caribou mosaic. | Several steps were taken in the 2003 plan to address this concern. Some caribou blocks were divided into smaller parcels to increase the number and spatial distribution of the mosaic sub blocks across the Forest. In addition, a new sub block category was created to incorporate the concepts of longer rotations in areas not well served by the rigid 100-year rotation period and to simulate the establishment of older forest types naturally found on the landscape. | Complete. However, although the recommendation has been implemented, the Audit Team still has concerns regarding caribou on the Forest (See Section 3.3.6) |
| 10. The Company should develop a plan, including a schedule for implementation, for addressing the knowledge gaps in growth and yield, and responses to silvicultural treatments on the Nakina North and Ogoki Forests. | The growth and yield levels of existing stands were reduced dramatically in the 2003 FMP. In the 1998 FMP, the planned harvest volume averaged 128 m3/ha, whereas in the 2003 FMP, a harvest volume of 102 m3/ha is expected.<br>The Company has developed and, since 2002, has implemented an excellent silvicultural effectiveness monitoring program. A growth and yield program, originally planned for 2001, was deferred until 2004 and as yet has not been implemented. However, the Company has recently hired a growth and yield program forester and implementation of the program is expected to begin next year. | The growth and yield program has not yet been implemented but the silvicultural effectiveness monitoring program will enable the Company to develop good information about responses to silvicultural treatment. |
| 11. The stand-level aspects of the marten guidelines should be implemented in the Company's forest operations. | The stand level aspects of the marten guidelines – in particular the requirement to leave six trees per hectare standing were fully implemented by operations staff on the Ogoki Forest during the last three years of the 1998-2003 plan period. Coarse woody debris left on site is not an issue on this Forest as a result of the significant damage caused by the snow and windstorm of October 2001. Sufficient Coarse woody debris is also normally left on site during normal operations. | Complete, however, as noted in section 3.4.6, the Audit Team has concerns regarding snag management under the natural disturbance pattern emulation guide. |
| 12. The MNR should act as a facilitator for discussions between the Company and the Ministry of Labour aimed at promoting snag management. | This is no longer considered an issue as all harvesting operations on the Ogoki Forest are mechanical and safety issues are minimal. Operators are instructed to not leave poor quality snags with advanced decay that may fall over more easily. The Company is complying with the standards set out in the marten guidelines to MNR's satisfaction and there have been no negative reports by MOL inspectors. | Complete |
| 13. LLFP should reinforce its prohibition on littering and empower supervisors | The ban on littering has been be reinforced by operations staff. The Company reports that areas are left clean of litter following each phase | Complete -much less litter was evident on the Forest. |

| Recommendation | Actions Taken | Status |
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| to vigorously enforce this order. | of operations: harvest, wood haul and regeneration. | |
| 14. The Company and MNR should jointly survey and report on the volumes of small conifer being left at the landings, particularly on lowland black spruce sites, and in light of the findings:<br>• consider reducing the utilization standards for conifer;<br>• investigate the feasibility of diameter-limit cutting on lowland sites (sometimes known as HARP); and<br>• investigate approaches for using the small conifer wood that is presently being left at roadside. | The Audit Team noticed that there was much less small conifer by roadside than during the field visit for the 2000 IFA. Since 2000, the Company has adjusted the minimum top diameter, which is now 5 cm. Timber is harvested and hauled in winter in tree-length form, which means that small diameter tops are taken to the millyard. During summer, timber is harvested as 8 and 16 foot lengths, which provides some leeway for utilizations of under-sized material. Pulpwood is chipped and but the small tops (smaller than 3.5 inches) of sawlog material are often chipped and used for hog fuel. | Complete. |
| 15. The Company should review the effectiveness of its management system for operations. The Company should develop a system for training supervisors and contractors in the relevant aspects of site planning and all forest operations and monitor performance. | Long Lake Forest Products is actively participating in the training programs developed by the Ministry of Training, Colleges and Universities (MCTU) competency-based standards and related performance requirements of the Mechanical Harvesting Equipment Operator certification program for all operators, contractors and supervisors. All employees and contractors and their employees have attended Company-sponsored workshops on the ISO 14001 environmental management systems being developed for use in the Company's woodlands operations. The area forester and other forestry staff make presentations on the Annual Work Schedule to all third party operators supervisory and management staff and to LLFP's supervisory staff prior to the commencement of annual harvesting operations. The purpose of these annual meetings is to review commitments and prescriptions from the FMP specific to the upcoming operating areas. | Complete. The Audit Team noted a marked improvement evident in control of field operations. |
| 16. The Company should develop a plan to improve the quality of CLAAG implementation, including: | A CLAAG training package for operators and foreman and third party operators was developed and first presented in the fall of 2001 and is presented each year prior to the start of logging in designated areas. | Key parts of the recommendation were completed. The Audit Team, in the current audit, |

| Recommendation | Actions Taken | Status |
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| - training operators and supervisors;<br>- monitoring modified harvest operations;<br>- reviewing the feasibility of using alternative harvesting equipment (such as high flotation tires or tracks); and<br>- developing contingency plans for dealing with bad weather conditions, especially in the seasons when the ground is likely to be wet but frozen (the late winter/spring and late fall/early). | Areas designated for modified harvest systems are assessed for compliance using the FOCIS system during the harvest phase. The areas harvested with the CLAAG system are also assessed once depletion mapping is available and if the CLAAG is of acceptable quality they are mapped and reported in the Company's silviculture system and reported in the following spring annual report. This tracking system will continue with future Annual Work Schedules and annual reports.<br>Supervisors discuss the CLAAG harvest system with the contractors they are working with using the same CLAAG training package presented by the area forester. Better planning has reduced the need to operate in areas susceptible to rutting that would require alternate equipment such as wide floatation tires. In the spring of 2003, the Company hired its first contractor utilizing a cut-to-length processing system. Contractors with high floatation tires have also been brought on to the Forest by LLFP. However, operating on frozen ground and avoiding sensitive sites when conditions warrant has proved more cost-effective. The field assessments confirmed that the levels of rutting in CLAAG areas had been reduced since the previous audit, so the training and operational measures appear to have been effective in regard to reducing soil disturbance.<br>Areas for CLAAG operations are selected from eligible areas in the SLOW3 forest unit, and are meant to be uneven-aged stands with abundant advance growth present, but not all areas are reviewed in the field prior to implementing CLAAG harvest methods. Some of the CLAAG areas we reviewed in the field had low levels of residual advance growth. This may be a function of the selection of areas where not enough advance growth was present in the pre-cut condition. | has recommended measures to further improve the implementation of CLAAG (See Recommendation # 15). |
| 17. The Company should identify site level issues related to site disturbance, identify potentially sensitive sites, develop a set of | As discussed earlier under recommendation # 16, additional areas are identified above annual requirements to allow for operations to operate in or avoid sensitive sites when ground conditions warrant. | Complete |

| Recommendation | Actions Taken | Status |
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| operating procedures to minimize disturbance in each situation, train Company staff and contractors in their implementation, and monitor progress. | The Company informed the auditors that sites susceptible to rutting are avoided when conditions are not appropriate for operating in. Most sensitive sites are harvested during the winter season, some sites are suitable for operating in the frost free season if rain levels have been low.<br>Since the approval of the 2003 FMP for the Ogoki Forest, a set of procedures to guide activities on shallow sites (NWR ES 12) had been followed.<br>These issues have been discussed during each year's annual work schedule training season since the fall of 2001. Packages that discuss operating procedures for logging in sensitive sites such as fine soils, organic soils and shallow soils have been developed and are presented each year to the third party licensees and Company field supervisors.<br>Both MNR and the Company's compliance officer have monitored sites for site degradation. Generally there have been no issues though one report of in-compliance with comments indicating a small area was rutted was discussed in the 2001-02 Ogoki Annual Report. | |
| 18. The Company should formalize its training program by:<br>• developing a system for tracking the training needs and training delivered to its staff and contractors; and<br>• keeping a database of the individual qualifications of staff and contractors. | Both Buchanan and Long Lake Forest Product's Company safety coordinator and the ISO/EMS coordinator have developed and are implementing training packages for areas of their responsibility. These individuals are maintaining a database of all Company employees and contractors and their employees that have participated in the training. Periodic review of these lists occurs to ensure training requirements are maintained up to date. As well, all new employees are assessed for any training or certification requirements and as offered this training at the first available opportunity. | Complete. |
| 19. The Company should implement a document control system to ensure adequate maintenance and distribution of forest management documents and records. | The Company has improved its digital and paper records filing system to better track amendments, AWS revisions, compliance records, aggregate pits, water crossings and other correspondence. As well, a corporate designed GIS based information system has been developed and is currently being implemented on a number of | Ongoing, although improvements have been made to the system. |

| Recommendation | Actions Taken | Status |
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| | Buchanan SFL's with the Ogoki scheduled to be converted to this system sometime in 2004.<br>While the digital and paper records filing system is complete, it is always in a state of improvement and maintenance. The corporate GIS based system will be in place for the Ogoki Forest by 2005. | |
| 20. The MNR should review the expected schedule of revenue generation and expenditures in the Forests and amend the schedule of payments to the Forest Renewal Trust in the SFL licence agreements for the Nakina North and Ogoki Forests if required. | Two renewal rate reviews were conducted during the audit period, and one rate change (for conifers) was implemented. The minimum balance has consistently been exceeded for both forests for the duration of the FMP; therefore, there is no need to amend the schedule of payments. The new amalgamated Ogoki Forest has a minimum balance of $2.0 M, which has also been met. To verify that this minimum balance will continue to be met, regular reviews of the Forest Renewal Trust Account are carried out by the Company and submitted to MNR. | Complete |
| 21. The conifer wood supply commitment in the licences should be renegotiated to reflect realistic regional wood flow dynamics while ensuring the long-term viability of the mills in Nakina and Longlac. | A formal review of the Ogoki conifer directives was not carried out, as it was no longer considered necessary with both sawmills working at the Ministry's recognized operating levels or higher and requiring the conifer for its mills as per the Schedule E direction. The Company therefore has not pursued changes to the SFL condition to have all conifer volumes shipped to the Company's Longlac or Nakina sawmill. | As the Status Report indicated, events since 2000 have made redundant the need to implement this recommendation. |
| 22. The Ministry should enforce the conditions of the licences to demonstrate that it does not condone the violation of legal terms and conditions it has set out. | During the audit period, the Company has delivered the majority of its harvested wood to the SFL directed mills. The Annual Reports indicate that a portion of wood has been delivered to mills in Thunder Bay – less than 10% in 2000-01 and less than 1% in 2001-2002. Some loads of logs too large in diameter to be processed by the equipment in the local mills are shipped to Thunder Bay. However, the majority of the wood that was reported in the Annual Report and generated by the MNR Timber Resource Evaluation System (TREES), is identified as pulp delivered to Thunder Bay pulp mills. As discussed in the Annual Reports, these volumes are not necessarily reflective of actual wood movement from the Ogoki Forest. Prior to July 2001, harvested wood was scaled for crown dues in the bush prior to shipping and the ratio of pulp to sawlogs and potential destinations | There have been no violations of the licence conditions during the audit period. |

| Recommendation | Actions Taken | Status |
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| | were applied as a factor developed by the Buchanan head office scaling department and the staff of the MNR Industry Relations Branch.<br>There have been no charges or concerns about Long Lake Forest Products adherence to the conditions of the Hauling Authorization.<br>The Annual Report Table AR-5 reports on the wood volumes that are delivered to various mills based on the outputs of the MNR TREES (the MNR timber billing system) program. As discussed above, some wood has been reported as being delivered to mills not identified in Schedule E but this movement of wood has been rationalized in the Annual Reports and has not been identified as an issue of concern by MNR. The Company has also developed agreements with other companies such as Neenah Paper which provide net benefits to both companies, and in the case of the Neenah Paper agreement, bring more wood to the Nakina and Longlac mills than leave the Ogoki to be used in other mills. | |
| 23. The issue of the Company's overt violations of the license commitments and subsequent direction of the MNR should be referred to the Board of Direction to determine a suitable admonishment. | The Board of Direction held a meeting on September 24, 2001 in which the issue of the Company shipping wood to sawmills not identified in the SFL was discussed. The Company reports that the Board felt that while movement of wood to non LLFP mills as exchange for wood from other areas was potentially acceptable from a business sense and did not threaten the intent of the SFL to ensure sufficient wood supply for the running of the two mills, this exercise had been carried out in an inappropriate manner. The Board noted these mills were now constructed and fully operational, which was not the case at the time of the violation of the licence. The wording of the licence condition was clear and mitigating circumstances did not excuse the Company from following them. The Board felt that recommended that the MNR prepare a letter of reprimand. After reviewing both Company and MNR records, this recommendation was not followed and a letter was not sent. | The matter was referred to the Board of Direction as required by the recommendation. Unfortunately, although the Board agreed with the auditors' assessment, the MNR did not prepare a letter of reprimand. |
| 24. The MNR, LLFP, Kimberly-Clark and Kruger should re-negotiate the | Through the course of discussions between MNR, LLFP, LWI and KC (now Neenah Paper), the decision was made to leave intact the | The hardwood supply situation is expected to |

| Recommendation | Actions Taken | Status |
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| hardwood supply commitment in the two SFLs to provide LLFP with greater flexibility in selling or exchanging the hardwood harvested from the two forests. | hardwood commitments of the SFL Schedule E. The hardwood supply situation appears to be about to change substantially in the area and it is expected that changes in hardwood supply commitments may be proposed in the future as a result of other review processes (e.g. MROL review).<br>LLFP and Longlac Wood Industries have negotiated a long-term wood supply agreement but it is not yet signed, which reflects broad areas of competition between the two companies. The two companies (and the third party licensees) have negotiated and successfully implemented a number of short-term agreements for the purchase and exchange of poplar fibre from the Forest since the Audit Action Plan was prepared, and the relationship between LWI and LLFP has improved somewhat in recent years. | change in the Nipigon area and this will likely lead to review and revision of hardwood commitments from the Ogoki Forest. |
| 25. The MNR should offer its services to act as a mediator/facilitator in resolving the issue of the development of the Geraldton garage and woodlands office complex. | The Company has purchased property within the limits of the former town of Geraldton suitable for the development of commercial facilities. It took considerable time to obtain appropriate zoning and access to the site, but these items are now in place. However, due to difficult times in the forest sector, the Company at present does not have the sufficient funds to construct the facility. | The intent of the recommendation, that construction proceed on the Geraldton garage and office complex, has not been met. Recommendation # 35applies to this situation. |

### 3.8.6 *Forest Renewal Trust*

The required minimum balances were in place for the Nakina North and Ogoki Forests at March 31, 2000 through March 31, 2004, and for the combined Ogoki Forest at March 31, 2005. The Forest Renewal Trust for the Ogoki Forest is currently carrying a large surplus of funds, but this will be reduced over the next few years as the Company implements a large tree planting program of over 9 million trees. We reviewed Company records for items invoiced to the Forest Renewal Trust for the years 2000 through 2005, for both the Nakina North and Ogoki Forests and the combined Ogoki Forest SFL. All invoices for this period were examined and all expenses were found to be eligible and appropriate as per the requirements of the Trust Agreement. The Company maintains good records of the silvicultural expenses and maps of the treatment projects as required by the licence.

Reviews of the renewal rates were conducted by the Company and MNR as required by the licence. Rate reviews were conducted in 2001 and 2004, and an appropriate change to the conifer rate was recommended and implemented in 2002. No changes to the rate were made as a result of the 2004 review.

### 3.8.7 *Forestry Futures Trust*

One silvicultural project had been funded through the Forestry Futures Trust. This involved tree planting of a burned area that had previously been seeded – the seeded jack pine stock had been mostly destroyed by the fire. We verified the treatment in the field; the density, growth and survival of the planted stock appeared to be excellent. Reports had been submitted by the Company to the Forestry Futures Trust as required and were of good quality.

### 3.8.8 *Specified Procedures Field Assessment*

We conducted a field assessment of approximately 23% of the silvicultural treatments that were invoiced to the Forest Renewal Trust for the year 2003-2004. In all cases the treatments were in place as mapped in the annual reports, were appropriate for the site conditions, and had been implemented to a good standard of quality.

The Specified Procedures report for the Ogoki Forest, prepared by KPMG, identified several vague items in Company documentation. All of these items were checked and were verified to be eligible expenses. The KPMG report did not identify any dollar errors related to the Forest Renewal Trust invoices.

### 3.8.9 *Inventory and Monitoring Obligations*

There were no X, Y and Z lands identified in the licence document, and no pest control treatments were conducted during the audit period.

No free-to-grow surveys were conducted during the audit period. Since the first silvicultural treatments on the SFL were reported in 1999 (these were natural regeneration treatments involving CLAAG), and the first artificial regeneration projects were implemented in 2001, free-to-grow surveys will not be required until the year 2008.

The Company has implemented a good silvicultural effectiveness monitoring program which will identify areas requiring further treatments prior to the free-to-grow stage.

During the audit period, as previously discussed, the Company initiated a project to investigate the feasibility of updating the barren and scattered areas in the FRI, and areas that had been depleted by fire since the inventory was prepared.

# 4 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

This is the second consecutive Independent Forest Audit that ArborVitae Environmental Services has conducted on the Ogoki Forest and having the benefit of our previous experience on the Forest enabled the Audit Team to appreciate the progress that the Company and MNR have made in developing and managing the Forest.

The Ogoki Forest is unusual in Ontario in that commercial operations have only been conducted on it since 1998, and the Forest is essentially a "natural" forest with a very short history of industrial timber harvesting. Because of the recent initiation of management activities on the unit, parts of the management cycle such as tending and free-to-grow (FTG) assessments have not yet been undertaken, as the renewing stands are too young to be considered FTG. The Forest also supports an extensive and thriving remote tourism industry, and vehicular access by non-forestry people is prohibited over much of the forest management unit. The Forest also supports caribou, and as such is managed according to Ontario's caribou guidelines, the centrepiece of which is the caribou mosaic, which aims to create a continuous availability of large, mature conifer forests which serve as primary habitat for caribou.

This audit has resulted in 35 recommendations and 16 suggestions, as well as two best practices. The Audit Team recognizes that this is a large number of recommendations and suggestions, especially considering that the overall performance of the Company and MNR was very good. The auditors feel that this reflects a number of things, including more experienced auditors, more regulation, and perhaps a greater willingness to identify areas where improvements may be made in the province's management approach. Fourteen of the recommendations are directed solely at the Company, eleven jointly at the Company and one or more levels of MNR, four at District MNR, three at Corporate MNR and three at the 2008 FMP planning team.

The most disappointing result was the state of affairs in the wake of the failure of the First Nations harvesting companies. The establishment of forest management on the Ogoki Forest was intended to provide benefits to three local First Nations communities. Unfortunately, none of the three companies were operating on the Forest at the time of the site visit, and almost no wood was harvested by these community-based forest contractors during the previous year. The outcome was disappointing because all stakeholders made a concerted effort to make this initiative successful, but in the end it appears that managerial and technical capacity shortfalls in the communities and within the logging company operations were a key reason why the effort collapsed. The amounts of wood available to each community will not support three separate forest harvesting companies that each own complete sets of equipment.

As this report was being prepared, the three First Nations approached the Company to discuss re-starting harvest activities. Aroland signed an overlapping agreement and commenced operations in Sept/October 2005 and Marten Falls is considering re-starting operations. The Audit Team is concerned that there do not appear to have been strategies developed to address the causes of the previous problems, but the Audit Team endorses the continuation of efforts to develop viable businesses.

A number of issues that were present in the previous audit proved to be stubborn to resolve, and ended up as issues during the current audit. These include:

- Hardwood utilization;
- The unfulfilled commitment to construct a garage/office complex in Geraldton; and
- Harvesting on sensitive sites (although a substantial improvement was observed compared to the previous audit).

During the audit, two concerns surfaced regarding old growth forest. The first is that there is considerable uncertainty regarding an important parameter (natural fire cycle rate) used in calculating how much old forest is "natural" for the Forest, and therefore how much should be retained in the course of forest management. The scientific community is not able to offer consistent direction on this parameter. The value used in the existing modelling efforts may be too low according to some experts' opinion, and therefore the amount of old forest identified in the benchmark modelling run (which is used to identify targets) may be too low. The second issue is related to the achievement of the existing old growth targets. Based on the 2003 plan's modelling, the projected achievement of the existing targets is either at the low end of the identified range, or below the identified range for six of eight forest units.

A related issue of concern to the Audit Team is the future of caribou on the Forest. The Company and MNR have done a good job of implementing the caribou guidelines and have improved some aspects of the caribou mosaic as identified in the previous IFA. Management of the Forest is also projected to achieve the caribou habitat target identified in the 2003 FMP. Nonetheless, under the present management of the Forest, which is guided by implementation of the caribou mosaic, the amount of caribou winter habitat will decline by approximately 60% over the period forecast in the plan's modelling. The Audit Team is concerned about the effects of such a decline on a species which is recognized by COSEWIC as being threatened, and is known to be sensitive to human disturbance.

Some very positive aspects of management were identified during this audit. The first is that the Local Citizens Committee (known as GANRAC) is very productive and is functioning at a very high level. Also the Company's system for tracking and monitoring silvicultural achievements is very well designed and implemented. Another aspect of management of the Forest not covered specifically by individual audit procedures, but recognized by the Audit Team, is the very high level of personal dedication and skill by the Company and MNR staff involved in the management of this unit. The two organizations also have an excellent working relationship. Finally, the Audit Team has seen a noticeable improvement in implementation of some of the operational aspects of management of this Forest since the last IFA.

### Overall Conclusion and Licence Extension Recommendation

**The Audit Team believes that management of the Ogoki Forest was in substantial compliance with the laws, licences and Forest Management Plans in effect during the audit period. The Ogoki Forest is being managed within the bounds of sustainability and it is recommended that the licence should be extended for a further five-year period.**

**Table 14. Summary of Recommendations and Suggestions**

**Principle: Commitment**

**Suggestion:**

1. The Geraldton MNR should display in the publicly accessible area of its office MNR's corporate policies related to SFM and make available documents that assist the public in understanding SFM, including documents that explain the role of the public in the SFM planning process.

**Principle: Public Participation**

**Suggestion:**

2. The effectiveness of GANRAC may be improved through the following: visits to the Ogoki Forest by GANRAC members; inclusion of forestry trade union representation in the membership; and MNR working with GANRAC to facilitate meetings that would allow GANRAC to exchange ideas with other LCC's and explore topics of interest and relevance.

**Principle: Forest Management Planning**

**Suggestions:**

3. The planning team for the 2008 FMP should develop mechanisms to ensure documentation of planning team activities and decisions in the absence of regular planning team meetings.
4. LLFP should restore all approved AWS submissions to their original condition.
5. LLFP may wish to consider devoting a section to fire detection strategies in future Fire Prevention and Preparedness Plans.

**Recommendations:**

1. The planning team for the 2008 FMP should develop an effective mechanism to ensure that planning team and LCC members who attend information centres sign the attendance sheets or otherwise record their attendance.
2. The 2008 FMP planning team should develop a more structured system for documenting and tracking the receipt of comments and the provision of responses, and for reporting this information in an effective format.
3. Corporate and Regional MNR and the Company should assess the impact of the snowdown event on the forest inventory, future growth and yield of damaged stands, and caribou habitat capability. It would be desirable if this was a region-wide study, led by MNR and involving the Companies holding SFLs on affected forest management areas.
4. Corporate MNR and the Company should develop a strategy for FRI update for the Ogoki Forest by March 31, 2006. The strategy should address the completion of updates to the fire and snowdown disturbances on the Forest, as well as updating stand descriptions of the remaining forested area; and should include a schedule for implementation that takes into account the implications of the 10-year planning cycle, and meeting the FIM

requirement for age of inventory.

5. The planning team for the 2008 FMP should ensure that that 2008-2018 FMP contains the required text related to wildlife in the Management Unit Description section of the Plan, and that table entries of wildlife habitat are correct.

6. Corporate MNR should conduct an analysis of the long-term viability of the caribou population on the Ogoki Forest given the present and forecast management regimes. Subsequent planning teams should ensure that the results of the assessment are incorporated into subsequent forest management plans.

7. Corporate/Regional MNR should provide updated direction regarding natural disturbance cycles to be used in the SFMM null run taking into account analyses of fire data and current scientific opinion.

8. The MNR should take measures to ensure that required alterations relating to the manipulation of forest cover are certified by an R.P.F.

9. The Company and MNR should submit AWS revisions for inclusion of silvicultural areas prior to undertaking operations on these sites.

## Principle: Plan Implementation

**Suggestions:**

6. If MNR decides to seize any of the roadside conifer wood on the AEDC or MFFDC overlapping licence areas, MNR should be able to offer it to LLFP without going through the RFP issuance process.

7. The MNR should consider issuing a separate, short-term Forest Resource Licence for hardwood if, by year 3 of the current FMP, a substantial amount of allocated hardwood area is unlikely to be left unharvested during the plan period.

8. The Company should continue implementing its snag survey protocol with the following additions/modifications:

- A method should be developed and implemented that ensures that the survey examines sites which are randomly selected within a cut block;
- Blown down snags should be recorded on the surveys; and
- Some sites should be re-visited to attempt to quantify the issue of snag blowdown.

9. The Company should determine the feasibility of different options for site preparation in overmature or windthrown mixedwood stands, such as "light" blading, winter shearblade, and powered trenchers. Prescribed burning may also provide an alternative for site preparation on these areas. LLFP may also wish to consider more use of white spruce planting, and techniques such as underplanting, in combination with spot herbicide applications or manual release.

10. The Company and MNR should consider developing and implementing a small-scale tending program initially, possibly with the involvement of representatives from the First Nations, on a non-contentious, carefully controlled site.

**Recommendations:**

10. By January 31, 2006, the Company should develop a Standard Operating Procedure for harvesting practices on inclusions of areas with sensitive soil conditions within harvest allocations. By March 31, 2006, the necessary training should be provided to operations

staff (especially equipment operators), and staff involved in compliance monitoring. Monitoring protocols should be adjusted if necessary.

11. MNR should take necessary measures to ensure the removal of the harvested wood which has been left at roadside on the AEDC and MFFDC overlapping licence areas.

12. The Company should utilize all merchantable timber remaining at roadside that was harvested during the audit period, by it or its contractors, by September 30, 2006. Should this recommendation not be completed, MNR should scale the remaining wood and charge the Company. The Company should scale the wood by the roadside that it or its contractors harvested during the audit period but is now unmerchantable, pay applicable Crown charges, and remove it from roadside.

13. The Company should plan its roadside operations so that all harvested wood can be removed efficiently within a reasonable time frame.

14. The Company should identify contractors and operators with poor snag retention performance and instruct them on how to improve their performance.

15. The Company should develop better definitions of the characteristics of stands suitable for CLAAG treatments for inclusion in pre-harvest inspections and conduct the appropriate staff training. LLFP should also consider means of leaving more residual trees on sites with lower pre-harvest levels of advance growth, to serve as an additional seed source for natural ingress.

16. The Company should analyse relevant information to estimate the area in need of tending, and develop an appropriate tending program for implementation within the current FMP period.

17. By March 31, 2006, the Company should amend the natural regeneration target in the 2003 FMP to ensure that the balance of planned but unreported natural regeneration area from the 1998 FMP term for the Nakina North and Ogoki Forests (consistent with the actual harvest levels for the 1998 FMP term) is carried forward. The Company should take appropriate measures to ensure that the reporting of natural regeneration will substantially meet the 2003 FMP targets on an annual basis.

18. The Company should rehabilitate closed gravel pits as required by provincial statute.

19. The MNR and Company should work together to revise the existing Water Crossing Protocol and Technical Manual to ensure that future crossings meet the requirements and specifications of the Environmental Guidelines for Access Roads and Water Crossings. The MNR and Company should jointly decide which crossings are in need of repair and on the course of action required to repair each crossing.

20. The Company should remove unused culverts from the Forest by December 31, 2006 and, in future, ensure that these items are picked up once water crossing/drainage installation has been completed.

## Principle: Systems Support

**Recommendation:**

21. MNR and LLFP should institute procedures to effectively document forest management planning processes, track the development and distribution of documents and ensure the timely and accurate submission of related records.

## Principle: Monitoring

**Suggestions:**

11. Where the 2008 FMP does not contain exceptions to the provincial silvicultural guides, LLFP should ensure that the FMP states this in the Monitoring and Assessment section.

12. For the next five-year compliance plan, LLFP should consider removing the commitment to formally revise APAs each time there is an AWS revision.

13. LLFP should annually review and update the summary of identified compliance issues and strategies contained within the Annual Plan of Action.

14. MNR and LLFP should jointly develop a system to ensure that start up notification is provided, properly documented and retrievable for each block.

**Recommendations:**

22. MNR should provide specific Ogoki Forest compliance targets and summaries within its compliance planning and monitoring documents and ensure that Part 1 and Part 2 of future Geraldton Area ACOPs make reference to the same target inspection levels.

23. MNR and LLFP should perform a greater number of joint inspections to develop a common understanding of operational standards applying to various types of operations.

24. In accordance with the requirements of the Guideline for Forest Industry Compliance Planning (2005) and in advance of the 2006-07 fiscal year, LLFP and any Company wishing to operate as an overlapping licensee should make a joint request to MNR for the delegation of compliance monitoring responsibilities on blocks that will be harvested by the OL.

25. MNR and LLFP should provide ten days notice of completed inspections to each other and electronically submit FOIRs within twenty days as required by the Guideline for Forest Industry Compliance Planning (2005).

26. LLFP should use smaller operational block sizes to reduce confusion related to area-specific reports and to facilitate the performance and entry of "Completed" forest operations inspection reports. The Company should clear up its backlog of "Suspended" harvest blocks that were harvested during the audit period by September 30, 2006 and submit "Completed" inspection reports for each.

27. MNR must verify all industry submitted non-compliant FOIRs in accordance with the requirements of the Guideline for Forest Industry Compliance Planning (2005).

28. MNR and LLFP should allocate sufficient resources to ensure the timely preparation, submission and review of annual reports.

29. LLFP should include a discussion of the results of the 2005 IFA in the annual report submission for the 2005-06 year.

30. The Audit Team strongly recommends that Corporate MNR revise the 2004 FMPM to require MNR review of all annual reports and consider alternate ways to handle relevant

workload issues.

## Principle: Sustainability

**Suggestion:**

10. The Company should ensure that wildlife species reported upon in Table AR-19 are the same as those identified in Table FMP-5.

**Recommendations:**

31. The planning team for the 2008 plan should ensure that predicted old growth achievement will be in the target range for all forest units. The planning team should also ensure that the achievement of old growth targets tends towards the mid-point of identified acceptable ranges, rather than towards the lower end.

32. The Company should revise the way it accounts for managed Crown forest area, so that area associated with AOCs and reserves is not removed from the area of Crown managed forest.

## Principle: Contractual Obligations

**Suggestion:**

11. MNR, with the Company's agreement, should offer multi-year overlapping licences to Nakina Heritage Corp as long as NHC's performance warrants.

**Recommendations:**

33. The Company, MNR and the three First Nations should continue their efforts to develop First Nations forestry capacity. A revitalized effort to do this should be based on more modest goals for future operations.

34. MNR, the Company and stakeholders associated with special licence conditions 2.0 and 3.0 should review these conditions and either amend them to update them or remove them from SFL #541965.

35. The MNR Regional Director and Nipigon District Manager should meet with the Company to consider measures that would result in the Company meeting its commitment to construct the garage/ office complex in Geraldton within a specified time frame, or undertaking measures that are equivalent to this commitment.

## Conclusion:

**The Audit Team believes that management of the Ogoki Forest was in substantial compliance with the laws, licences and Forest Management Plans in effect during the audit period. The Ogoki Forest is being managed within the bounds of sustainability and it is recommended that the licence should be extended for a further five-year period.**

# Appendix A: Comparison and Trend Analysis of Planned Versus Actual Forest Operations Report for the Ogoki Forest

The Comparison and Trend Analysis Report which follows as Appendix A was written by Staff of Long Lake Forest Products Inc. Although the Report was reviewed by the Audit Team, the Audit Team had no role in writing it.

# OGOKI FOREST MU 241
# & NAKINA NORTH FOREST MU 240

## SFL# 541 965 & SFL# 541 980

## INDEPENDENT FOREST AUDIT
## April 1, 2000 to March 31, 2005

## COMPARISON & TREND ANALYSIS OF PLANNED VERSUS ACTUAL FOREST OPERATIONS REPORT

REGISTERED PROFESSIONAL FORESTER
1956
PAUL MACINNIS
ONTARIO

Prepared by: Paul MacInnis
Paul MacInnis, RPF
Ogoki Planning Forester
Long Lake Forest Product Inc.

Submitted by: Paul MacInnis
Paul MacInnis, RPF
Ogoki Planning Forester
Long Lake Forest Product Inc.

Submission: July 27th, 2005

# OGOKI FOREST (MU 241) & NAKINA NORTH FOREST (MU 240)
## SFL # 541 965 & SFL # 541 980
## Independent Forest Audit

## Comparison & Trend Analysis of Planned Versus Actual Forest Operations

## 1.0 – INTRODUCTION

The following comparison and trend analysis report has been prepared in accordance with the requirements of Appendix C of the *Draft Independent Forest Audit Process and Protocol* (MNR, March 2005).

The period of this Independent Forest Audit (IFA) is April 1, 2000 to March 31, 2005 (five fiscal years). The purpose of this report is to evaluate various primary management components of the Nakina North & Ogoki Forests, compare planned versus actual levels of forest operations, and discuss trends as they pertain to the management of the Forests.

### *1.1 – Creation of the Ogoki Forest and Management History*

The current Ogoki Forest is a result of the amalgamation of the former Nakina North and Ogoki Forests and is located north of the municipality of Greenstone. This newly created town, established in 2001, is comprised of the former towns of Nakina, Geraldton, Longlac, Jellicoe and Beardmore. The Forest is 10,900.6 square kilometres in size and is situated between 50°30' – 51°30 latitude and 86°30' – 89°15' longitude in Northwestern Ontario, approximately 400 kilometres northeast of Thunder Bay, Ontario. The total area includes 9,735 km$^2$ of forested area, the majority of which is Crown Land available for forest management and timber production.

The Forest is bordered to the north and east by the northern limit of the Area of the Undertaking as identified in the Class EA. To the west and southwest are two Sustainable Forestry Licences (SFLs) held by Domtar Inc.; the Armstrong and Lake Nipigon Forests. To the south is the Kenogomi Forest, a SFL held by Neenah Paper Inc (formerly Kimberly-Clark Inc.). The exact boundaries of the Ogoki and Nakina North Forests are indicated in the SFL documents.

The Sustainable Forest Licence for the Forest is held by Long Lake Forest Products Inc., (LLFP); a member of the Buchanan Forest Products group of companies. Buchanan Forest Products Ltd., is a Thunder Bay based company with sawmills in Thunder Bay, Dubreuilville, Atikokan, and Hudson as well as in Longlac and Nakina, Ontario. LLFP company offices are located at the mill sites in Longlac and Nakina. Woodlands operations offices are located at the main Ogoki Operations Camp situated on the forest and at the Buchanan forestry office in Thunder Bay.

While the responsibility for management of Crown lands is mandated to MNR, the Crown has delegated many responsibilities for aspects of management to LLFP. Management responsibilities have been delegated through the granting of Sustainable Forest Licences (SFL) #541965 (Ogoki Forest) and SFL #541980 (Nakina North Forest) and then of the amalgamated Ogoki Forest SFL #541965. These responsibilities include the preparation of Forest Management Plans (FMP).

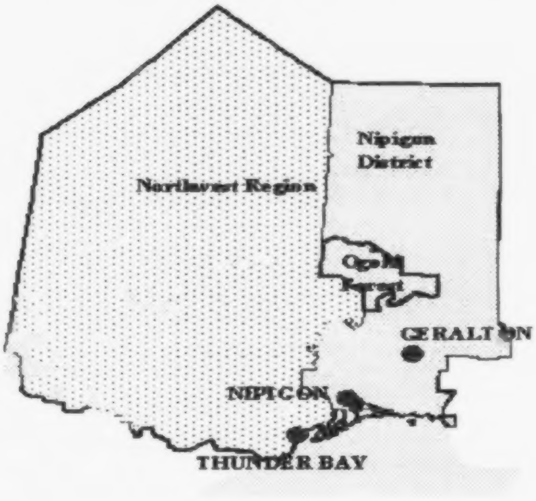
Timber from the Forest is directed primarily to feed the company's two sawmills located in Longlac and Nakina. The 2003-2008 FMP supersedes the two previous plans for the Ogoki and Nakina North Forests, also prepared by LLFP, which covered operations from April 1, 1998 to March 31, 2003. The two forests were amalgamated into one management unit for the purpose of facilitating the preparation of management plans and the administration of the SFL. The letter of authorization is dated September 19, 2001 and a copy can be found in the Supplementary Documentation of the 2003-2008 Ogoki FMP. The SFL was officially amended on June 8, 2004.

It is the responsibility of LLFP, delegated by the MNR, to prepare the FMP for the Forest. The twenty-year plans are evaluated and rewritten every five years to take advantage of new information and direction. It is also the responsibility of LLFP to develop and deliver a comprehensive renewal and maintenance program on the Ogoki Forest under the terms and conditions of the SFL. All reporting requirements of the SFL relating to this plan are the responsibility of LLFP.

The Forest is located within the MNR's Nipigon District, a part of the Northwest Administrative Region. The offices for Nipigon District are in Nipigon and the office for the Northwest Region is located in Thunder Bay. Figure 1 shows the location of each forest relative to the district and region. The majority of the MNR's responsibilities are carried out by staff of the Nipigon District's Geraldton Area Office. The Ministry of Natural Resources has the ultimate responsibility for the Province's natural resources. In particular, these relate to resource development and the provision of the sustainability of Crown forests by their management to meet social, economic and environmental needs of present and future generations.

Communities in close proximity to the Forest include Eabametoong First Nation and Marten Falls First Nation, which are located north of the Albany River. Aroland First Nation and the former Township of Nakina (now part of the Municipality of Greenstone) are located approximately 92 road kilometers to the southeast of the forest boundaries. The communities of Geraldton and Longlac are located 188 road kilometers and 196 road kilometers southeast of the forest, respectively.

Figure 1: The location of the Ogoki Forest in Nipigon District and MNR Northwest Region.



The primary road network accessing the Forest consists of the Ogoki Road, which runs north to the Ogoki River and northwest to within a few kilometers of Wabakimi Provincial Park (the latter section of this road is called the Doug Lake Secondary Road). The other primary road networks within the Forests include the Gordon Creek Road that accesses the southwest section of the forest; the Reckett Road that accesses the south central section; the David Lake Road that accesses the northeast section; and, the Wintering Lake Secondary Road that accesses the north central section. There is also potential access via the Anaconda/Terrier Lake Road systems through private land and the Kenogomi Forest into the southeast part of the forest. Much of the road network currently on the forest is only available for resource extraction purposes and, other than the Gordon Creek Road, is restricted to unauthorized use. The access control decision was established in the 1998-2018 FMP and confirmed for the 2003-2023 FMP as discussed later in this report. Generally, access for recreation and tourism purposes on the Ogoki Forest is restricted to float plane, helicopter or canoe.

The Nakina North Forest was originally part of the Nakina Forest, which was established as a Forest Management Agreement (FMA) area under license to Kimberly-Clark Inc., (KCI). Timber harvesting operations commenced on the Nakina Forest FMA in 1985; however, operations on the forest had been ongoing since 1959 under different licensing agreements.

The Ogoki Forest was first established in 1974 and was licensed to KCI under Order in Council licence 360500. The first twenty-year management plan for the former Ogoki Company Management Unit was prepared by KCI and covered the period April 1, 1981 to March 31, 2001. It was prepared in accordance with the *Timber Management Planning Manual for Crown Lands in Ontario* (1985).

The Forests were not developed as planned due to the development of lower-cost wood supply alternatives for the Terrace Bay pulp mill. Other factors that impacted the development of the Nakina North and Ogoki Forests were the 1986 permanent closure of the Terrace Bay stud-mill and the 1987 closure of KCI's Longlac sawmill. The mill closures reduced the wood supply requirements from the northern portions of KCI's licence area and resulted in the deferral of any operations.

On June 23, 1993, LLFP purchased the Longlac sawmill from KCI. On September 17, 1993, KCI requested the severance of the Nakina North Forest from the Nakina Forest as part of the commitment made to LLFP in the agreement regarding the sale of the Longlac sawmill. The severance was finalized in January of 1996. KCI had previously relinquished their forest licence on the Ogoki Forest. The total area was tendered through a MNR process to attract new industrial development to the Greenstone area. LLFP was the successful candidate and received the SFL in 1996 on the strength of its proposals to upgrade and expand its mill in Longlac and construct a new sawmill in Nakina.

After the SFLs were issued and during the preparation of the 1998-2018 FMP, the decision was made by the MNR to expand Wabakimi Provincial Park. The park expansion removed approximately 36,000 hectares from the original area of the Ogoki Forest. The licence boundaries described in the SFL for the amalgamated Forest reflects the withdrawal of this park from the management unit. The 1999 Ontario Living Legacy Land Use Strategy created one new park and a number of conservation reserves that, while still part of the SFL, effectively removed approximately 10,000 hectares from forest management activities.

The Forest provides a significant portion of the wood supply for the LLFP Spruce Pine Fir (SPF) dimensional lumber mill in Longlac and is the major supplier for the SPF dimensional lumber mill operated by its subsidiary, Nakina Forest Products. The Longlac and Nakina mills produce 152,000,000 fbm annually and employ up to 500 people including those in woodlands operations. Poplar volumes are directed to Neenah Paper Inc.'s (formerly KCI) pulp mill in Terrace Bay, and Longlac Wood Industries Veneer and Waferboard mill in Longlac.

Other mills that benefit from the Forests are Neenah's Terrace Bay Mill (by-product sawmill conifer chips and pulpwood), Norampac in Red Rock (mainly by-products) and Columbia Forest Products in Rutherglen (birch veneer). A small portion of logs, too large to process at LLFP facilities, is utilized at the Thunder Bay sawmills of Buchanan Forest Products. Eight-foot pulpwood is not directed to any mill but is generally offered in exchange for sawlogs from the Kenogomi Forest. A small portion is sold on the open market or exchanged for sawlogs with other regional forest companies such as Bowater Canadian Forest Products and Abitibi-Consolidated's pulp and paper mills in Thunder Bay.
LLFP Woodland's Division conducts significant harvesting operations on the Ogoki Forest and is a major supplier of wood fibre to various local mills. Companies owned by Aroland First Nations and the Nakina Heritage Corporation conduct harvesting operations under the authority of Overlapping Forest Resource Licences on the area of the Nakina North Forest. Companies based in Marten Falls and Eabametoong (Fort Hope) operate on the Ogoki Forest also on Overlapping Forest Resource Licences. The conifer timber harvested by these overlapping licensees is also primarily directed to the two LLFP mills. Figure 2 and Figure 3 indicates the boundaries of the Ogoki and Nakina North Forests and the location of the surrounding communities.

Figure 2: Boundaries of the Ogoki Forest

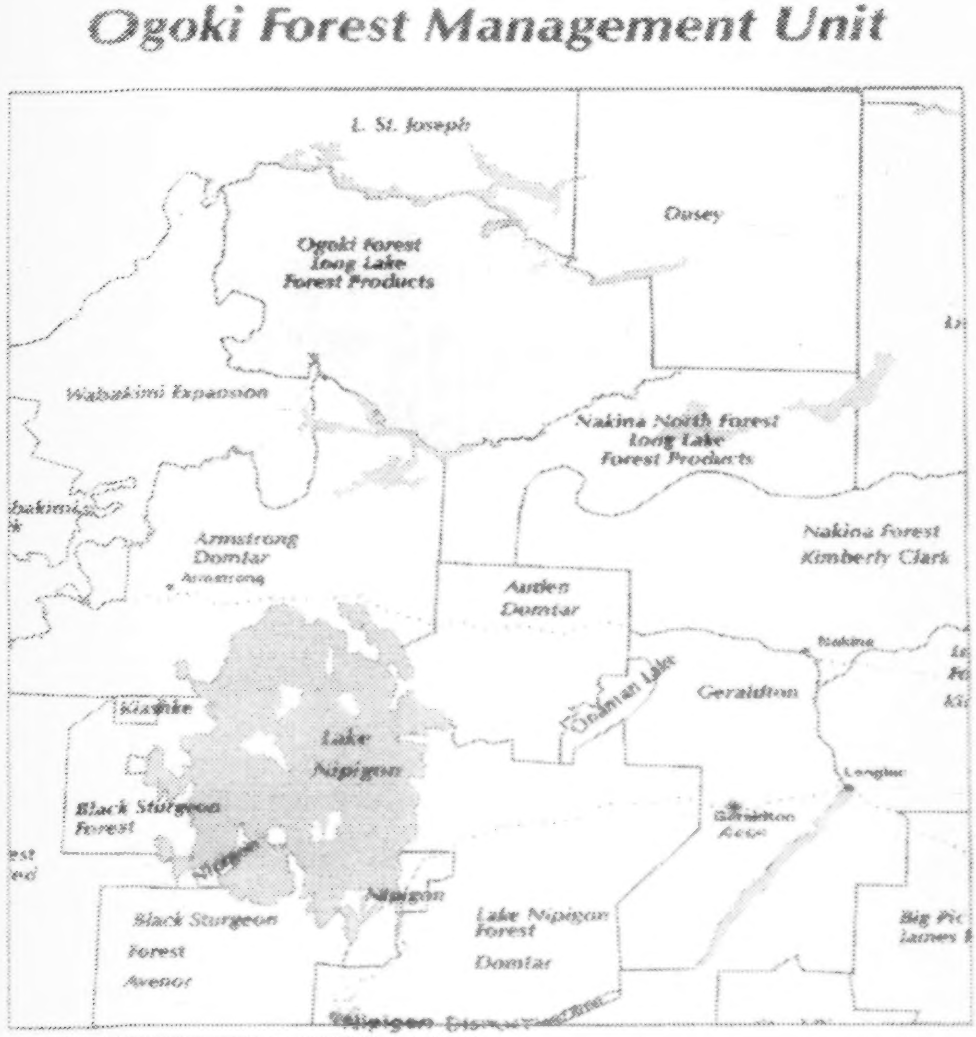
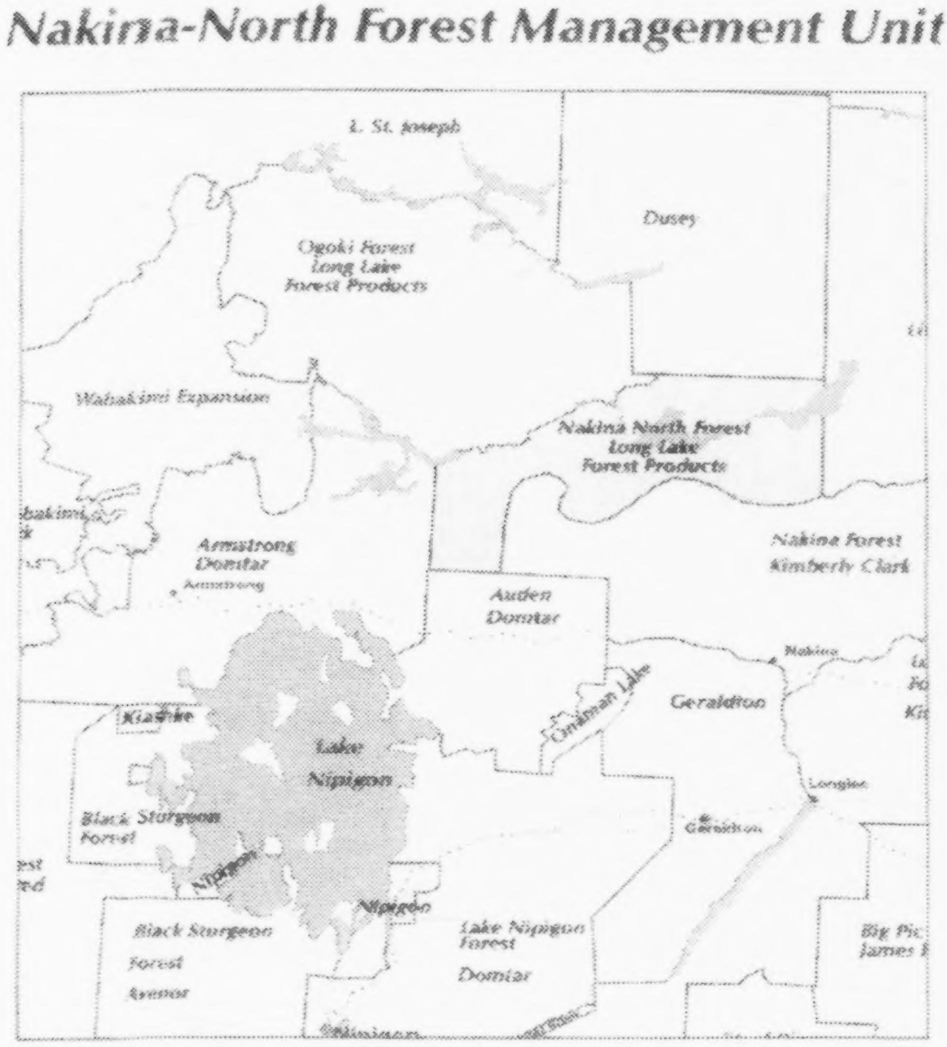


Figure 3: Boundaries of the Nakina North Forest



### *1.2 –October 2001 Snowdown*

On October 24, 2001, a snowstorm followed by strong winds blanketed a vast area of Northwestern Ontario. The area that was affected by this storm ranged from Sioux Lookout in the west, south to Lake Nipigon, east to the First Nation community of Marten Falls and north as far as the Area of the Undertaking. Within a short period of time, approximately three to four feet of wet snow and ice covered the Ogoki and Nakina North Forests and accumulated on the canopies and crowns of the coniferous trees throughout the forest. Winds followed the snow and ice storm resulting in areas of blow downed trees and snapped treetops.

LLFP, in cooperation with the Geraldton Area MNR, conducted several reconnaissance flights in November and June to assess the damage and extent of the storm. The survey confirmed that the damage varied in intensity throughout the forest and no concentration of damage occurred in any particular area. Due to the extent of the damage, professional forestry staff from the forest industry, the MNR (Forest Health and Silviculture Section) and the Canadian Forest Service held consultations. It was determined that an assessment would need to occur in the spring/summer of 2002.

The assessment was only at a broad scale due to the extensive area affected by the storm. The survey resulted in a description of a large portion of the forest as being severely damaged. The description applied to an area centered on Kagianagami Lake and includes the majority of the former Nakina North Forest. In early May 2002, Geraldton Area Fire Management staff flew reconnaissance and developed maps indicating the severity of the damage in terms of fuel loading and forest fire hazard potential. LLFP is also concerned about the effects of the storm on the long term wood supply from insect infestation.

Over the past several years, many forest managers worked with MNR to assess the impact on the wood supply in the short and long term. Considerable effort was put forth by all concerned parties to determine the extent that salvage operations can utilize portions of the damaged wood. Two amendments were submitted during the 1998-2003 Ogoki and Nakina North Forests FMPs to allow for salvage operations to occur in areas that were unallocated. In addition to these areas, LLFP and MNR concentrated primarily on the approved allocations and jointly determined a salvage rate reduction for any normal allocation areas that were affected.

Access was a limiting factor in regards to harvesting the damaged areas since both forests have a limited number of primary and secondary roads. LLFP and MNR concentrated on areas that were easily accessible via the existing road network and determined that future road development would result in providing additional opportunities to harvest damaged areas. Many areas that were allocated in the plan were affected, which raised the costs of harvesting and at the same time lowered the yields; especially in winter areas where snow cover of the downed timber makes recovery difficult. Some preliminary work carried out in late winter of 2002, demonstrated that yields were lower than expected. The productivity of the harvesting operators had also been reduced by up to 30% from levels achieved prior to the storm. This has a severe economic impact on the companies and their contractors that work on the forest.

### *1.3 – Sources of Information for the Trend Analysis*

The following Tables (and associated graphic illustrations) are appended to the text of this report:

Table 1: Summary of Total Area Under Management
Table 2: Description of Forest Units
Table 3a: Summary of Planned & Actual Harvest Volumes – Normal Harvest
Table 3b: Summary of Planned & Actual Harvest Volumes – Salvage Harvest
Table 4: Summary Report of Depletion Area: Comparison to the Selected Management Alternative
Table 5: Summary of the Managed Productive Forest by Forest Unit
Table 6: Summary Report of Renewal, Tending and Protection operations
Table 7: Harvested Area Successfully Regenerated – Summary of All Forest Units

All information presented in this report related to "Planned" operations incorporates most applicable minor amendments made to the 1998-2003 Nakina North Forest and Ogoki Forest FMPs as well as the 2003-2008 Ogoki Forest FMP. The FMP tables for both the 1998-2003 and the 2003-2008 were not completely updated; however, changes associated with amendments regarding harvest areas and volumes were updated as requested by the MNR. Hence, source information for this report is the updated FMP tables and not the original tables submitted with the FMPs.

For the 2004-2005 fiscal year, harvest and volume information as well as silviculture information is due to be reported in the Annual Report Part II in November 2005. Therefore, information related to both is not yet available for inclusion in this report; only the 2003-2004 actual information is available and presented.

Where applicable the projected/planned/actual information has been presented as **"annualized"**. The number of years over which the data has been annualized is described in the discussion for each applicable table prepared in this report. Only Tables 3a, 3b, 4 and 6 present data in an annualized format.

The 1998-2003 Report of Past Operations (RPFO) for the Nakina North and Ogoki Forests, previous RPFO and current and previous FMPs should be reviewed for more information on forest management operations, problems and issues for the Ogoki Forest.

## 2.0 – SUMMARY OF TOTAL AREA UNDER MANAGEMENT

Table 1 presents a summary of total area under management for the 1998-2003 Nakina North FMP, 1998-2003 Ogoki FMP, and the 2003-2008 Ogoki FMP terms. With the amalgamation of the Nakina North Forest Management Unit into the Ogoki Forest Management Unit in 2003, the Production Forest land base decreased by 42,701 hectares. In addition, during the IFA period, there were two land base changes to the SFL area, resulting primarily from:

- The creation of 3 conservation reserves and 1 new park through the Ontario Living Legacy process; and,

- A new Forest Resource Inventory (FRI) for the entire area, delivered in 2000, included in the original Ogoki Forest, and updates made as a result of natural and harvest depletions.

The net result of these changes was a decrease in Total Production Forest area from 819,146.0 hectares to 746,500.1 hectares between the 1998 and 2003 planning period. As illustrated graphically with Table 1, significant area changes worthy of highlighting include:

- The significant increase of Protection Forest, which was the result of new FRI information for the Ogoki Forest;
- The increase in area depleted, primarily as a result of the first forest harvesting operations commencing on the forest in 1998, as well as fires and blowdown disturbances which occurred since the inventories were created;
- The significant reduction of area classified as barren & scattered (B&S) or not satisfactorily regenerated (NSR) due to the reclassification of the areas to being depleted; and
- The significant decrease of 41% in the white birch working group and slight decreases of 20% in Jack Pine, 16% in Spruce and 6% in the Poplar working groups, which are also results of the new and updated FRI information.

### General Trends

- Changes to the administrative boundaries of the Forest and the creation of new parks and protected areas have all had an impact on the overall managed land base. It is not expected that such changes will occur again over the next few FMP periods. This stability in the forest land base will permit improved comparisons and trend analyses in the future.

- Updating and maintenance of the Forest Resource Inventory with depletion and survey information is a continual process that is required to ensure maximum available land base for forest management purposes.

## 3.0 – DESCRIPTION OF FOREST UNITS

Table 2 presents a description of the forest units used in the 1998-2003 and 2003-2008 FMPs.

There were nine forest units defined in both the Nakina North and Ogoki FMPs. The forest units for the Nakina North and Ogoki Forests were developed with consideration for economics, product requirements and site, yield, habitat and succession similarities. This was done to reflect the various aggregations of forest stands and their associated site types and to reflect site productivity in relation to site class and product proportions. It was recognized by LLFP and MNR that although defining the forest units using this method was effective some modification would have to occur due to the inaccurate FRI in relation to site class and area that was realized only after operations began on the Nakina North and Ogoki Forests.

With the availability of Geographic Information System (GIS) for the preparation of the 2003-2023 FMP, as well as a new FRI, more efficient manipulation of digital FRI information was possible. The forest units developed specifically for the 2003-2023 FMP are somewhat different than the forest units used in the previous Ogoki and Nakina North 1998-2018 FMP's. They were reviewed and supported by MNR regional specialists in March 2001. The primary reason for changing the forest unit classifications was to take advantage of better information that had become available, especially the new FRI. Incorporated in this new FRI were stand attributes that assigned site description codes describing broad vegetation/landform classes based on photo interpreted features. The Nakina North Forest digital FRI utilized for the 1998-2018 FMP also has site description codes used in the classification of forest units.

The starting point for the development of new forest units was to analyze the suite of standard forest unit classifications developed by MNR's Northwest Science and Information Unit. These were found to be very useful because of the great deal of research that has gone into their development. These were not available at the time of the preparation of the 1998-2018 FMP. After classifying the forest and assigning a Standard Forest Unit label (SFU), all forest units that were considered to represent too small a portion of the land base to manage for separately were merged into other forest units (given that they were ecologically similar and could be rolled up easily). The Site Description Codes were used to further refine the lowland classes.

Eight forest units had been agreed to by the planning team as the basis for describing the forest cover on the Ogoki Forest for the purposes of preparing the FMP. Table 2 describes the criteria used to develop the query set used to classify these forest units from the FRI database.

In addition to the information found in the FRI database, a project was initiated during the preparation of this FMP that identified, through field surveys and photo interpretation, the Northwest Region Eco-site labels associated with the majority of stands that met the 20-year eligibility criteria for allocations. The observations on eco-site and forest unit are also indicated below in Table 2.

As a result, the number of forest units derived for the 2003-2008 Ogoki FMP was decreased from nine from the 1998-2003 FMPs to eight, and they are based on FRI species composition groupings into three main forest types – generally pure conifer, generally pure hardwood and mixedwood. The refinement of the three mixedwood forest units (Conifer – Dominated Mixedwood, Hardwood – Dominated Mixedwood and Mixedwood) facilitates better volume estimations and sustainable management of these forest types.

**General Trends**

- In general, relative to those used in the 1998-2003 Nakina North and Ogoki Forest FMPs, the forest units used in the current FMP more accurately portray forest stand conditions and, most importantly, facilitate management of mixedwoods on the Forest.

## 4.0 – SUMMARY OF PLANNED & ACTUAL HARVEST VOLUMES

### Normal Harvest Volume Utilization

Table 3a presents the summary of planned and actual volumes for normal harvest areas. The volume presented is the 'utilized' volume. For the 1998-2003 period, the planned and actual normal volume has been annualized over the five year period (by dividing by five) for the Nakina North and Ogoki Forests. An additional column has been added that sums the two forests into one in order to make comparisons to the newly amalgamated Ogoki Forest. For the 2003-2008 period, the planned volume for the five year period has also been annualized (by dividing by five). However, as actual volume information is only available for 2003-2004, this is all that has been presented for the 2003-2008 period. For the 2004-2005 fiscal year, volume information is due to be reported in the Annual Report Part II in November 2005. Planned volumes for normal harvest areas incorporate all minor amendments made to the respective FMPs.

As presented in Table 3a and associated graphic illustration, only 60% of the planned annualized 1998-2003 FMP volume was actually harvested (68% of conifer and 29% of hardwood). This was directly related to the October 2001 snowdown event and subsequent salvage harvest operations within those areas. A large proportion of the normal allocations was affected and received a salvage rate, in particular on the Nakina North Forest, as well as in some portions of the Ogoki Forest. An amendment to document the transfer of normal allocations to salvage allocations was never requested or submitted and only a letter requesting a salvage rate was required. As a result, the FMP Tables were not updated to reflect this change; therefore, comparisons to them are skewed and incorrectly represent the true amount of original harvest volume that was allocated in the 1998-2003 FMPs.

In the first year of the current 2003-2008 FMP, even with continued snowdown salvage operations, 42% of the planned annualized volume was actually harvested. The reason for this was that a large portion of the harvesting operations operated in salvage areas in order to maximize utilization of the fibre. This resulted in a lower percentage of normal allocations being harvested.

Poplar marketability and utilization is still considered an issue on the forest; however, the issue is continually being worked on in conjunction with the companies who utilize the product. The entire volume of allocated poplar on the Forest is directed to Longlac Wood Industries (LWI) and Neenah Paper Inc. as a condition of the SFL. During the 1998-2003 period, there had been a number of operational challenges imposed on the logging companies working on the forest due to the lack of markets for the large volumes of lower grade poplar. The 2000 IFA carried out on the Ogoki and Nakina North Forests highlighted the growing concern about the lack of markets for the majority of the allocated poplar volume, and the subsequent utilization issues. When neither LWI nor Neenah has required hardwood, LLFP has had to leave poplar that was harvested and scaled by the roadside for lack of a user. In other situations, excessive amounts of hardwood were left standing on cutover areas, which is undesirable from a silvicultural perspective. These issues are also discussed in the Compliance Plan developed as part of the 2003-2008 Ogoki FMP.

Since the 1998-2003 period, LWI and LLFP logging operators have made an increased effort to utilize a wider range of quality and quantity of poplar. However, the lack of markets for the lower grade poplar, including low requirements for roundwood pulp for Neenah Paper's mill, indicate this will continue to be a problem throughout the implementation of the 2003-2008 FMP. Negotiations between LWI, Neenah Paper, LLFP and MNR are underway to analyze the markets.

Salvage Harvest Volume Utilization

Table 3b presents the summary of planned and actual volumes for salvage harvest areas. The volume presented is the 'utilized' volume. For the 1998-2003 period, the planned and actual harvest volume has been annualized over a two year period (by dividing by two). As the snowdown event occurred in 2001-2002, there was only the remainder of that year and the following year to conduct salvage operations. For the 2003-2008 period, the utilized planned volume for the five year period has been annualized (by dividing by five); however, as actual volume information is only available for 2003-2004, this is all that has been presented for the 2003-2008 period. For the 2004-2005 fiscal year, volume information is due to be reported in the Annual Report Part II in November 2005. Planned volumes for salvage harvest areas incorporate all amendments made to the respective FMPs.

As presented in Table 3b and the associated graphic illustration, 382% of the planned annualized 1998-2003 FMPs volumes were actually salvaged. The actual volume harvested was significantly higher than the planned for the inverse reason stated in the above section relating to normal harvest volume utilization. Since amendments on each forest never occurred to transfer those normal allocations affected by the snowdown event to salvage allocations, the FMP Tables were never updated. Although the volume was subsequently tracked as salvage, when one compares it to the approved FMP Tables it appears that over harvesting occurred. In fact, the additional salvage harvest volume makes up the difference in the normal harvest volume. By combining the planned normal with the planned salvage harvest volume, and comparing it to the actual combined normal/salvage volume, one can determine that 90% of the total planned salvage/normal allocations were harvested on the Nakina North and Ogoki Forests.

As with normal harvest volume utilization during this same period, species that were least marketable during the period (poplar, cedar and larch) had the lowest utilization. In addition, the quality of products from salvaged damaged timber, particularly for sawlogs, had a significant impact on utilization. Also the variance in the intensity of the snowdown event also impacted the utilization of the fibre. In addition, it also impacted the harvesting operations working within the affected areas; lower productivity per man hour increased the time required to harvest the damaged fibre.

In the first year of the 2003-2008 FMP, actual salvage volume harvested is 173 % of the planned annualized volume. The reason for this is two fold. The same issue regarding the process of changing normal allocations into salvage allocations without having an amendment has occurred in the 2003-2008 FMP. The second reason is that the salvage opportunities continue to be a priority for the first two years of the current plan, as timber/product quality, and not necessarily species, determines the overall marketability of the salvage volume.

General Trends

- Volume utilization from both normal harvest and salvage harvest areas has improved during the IFA period, particularly for poplar.
- Normal volume harvest levels will continue to rebound to annual planned volume as operations in salvage harvest areas decrease.
- The high percentage of the timber volume from the snowdown salvage operations is still marketable but the utilization of the timber is becoming increasingly difficult due to the length of time that has passed since the event occurred. The utilization is expected to decrease rapidly as the product quality declines over time. The company is now concerned with the increase of insects, in particular the white-spotted sawyer beetle, which is affecting adjacent forests that were affected by the same snowdown event.

## 5.0 – SUMMARY OF PLANNED AND ACTUAL DEPLETION AREA

Table 4 and the associated graphic illustration present the summary of planned and actual depletion area. The planned/projected and actual depletion areas are presented by plan period and by forest unit for each forest and for a combined Nakina North and Ogoki Forest. For the 1998-2003 period, the planned/projected and actual area depleted has been annualized for the five-year period (by dividing by five) and the planned and actual salvage harvest information has been annualized over a two-year period (by dividing by two). Since the snowdown event occurred in 2001-2002, there were only two years to conduct salvage operations.

For the 2003-2008 plan period, the planned/projected depletion area has been annualized for the five-year period (by dividing by five); however, as actual depletion information is only available for 2003-2004, this is all that has been presented for the 2003-2008 period. For the 2004-2005 fiscal year, depletion information is due to be reported in the Annual Report Part II in November 2005.

Information related to projected depletion through natural disturbance is not available as it is not presented in the source FMP tables. Planned depletion areas incorporate all amendments made to the respective FMPs.

For the 1998-2003 period, the actual normal harvest (and bypass) depletion area (annualized) was 80% of that planned and available for the Ogoki Forest, 65% of that planned and available for the Nakina North Forest, which results in a 75% of that planned and available for the combined Nakina North and Ogoki Forests. This is directly related to the shift from normal harvest to snowdown salvage harvest operations (as discussed previously), as well as FRI inaccuracies in terms of area on the Ogoki Forest. In addition, the marketability of certain species also impacted the level of harvest within a number of forest units primarily those with a hardwood component.

In terms of the planned salvage area, it is annualized over two years rather than five in Table 4. It is annualized over a two-year period since harvest operations were concentrated on these areas to maximize utilization of the damaged timber. A combined total of 574% of the annualized planned salvage area was harvested in the last two years of both the Nakina North and Ogoki FMPs. The significant difference is a result of normal area receiving a salvage rate and tracked as salvage without requiring an amendment to update the FMP Tables. Only 46% of planned reserves were actually reported as depleted as part of normal harvest operations for the combined Nakina North/Ogoki; 58% on the Ogoki Forest and 33% on the Nakina North Forest. A total of 341.3 hectares on the Ogoki Forest and 58.2 hectares on the Nakina North Forest were naturally depleted by fire during the 1998-2003 period. In addition the area naturally depleted by fire, 270.8 hectares was also depleted by a blowdown event on the Ogoki Forest. Due to the varying intensity of the snowdown event, no area was ever recorded as naturally depleted in either the Nakina North or Ogoki Forest FMPs.

In the first year of the 2003-2008 FMP, even with continued snowdown salvage operations, the actual normal harvest (and bypass) depletion area was 44% of planned and 41% of available. Actual reserve depletions through normal harvest operations were 61% of planned. In terms of the planned salvage area, it is annualized over two years rather than five in Table 4. It is annualized over a two year period since harvest operations concentrated on these areas to maximize utilization of the damaged timber. A total of 94% of the planned salvage area was harvested in the 2003-2004 period. Four years following the snowdown event, product marketability and quality, and not necessarily species, impacted the feasibility of salvage operations. However, operators on the forest still concentrated on snowdown salvage in the first year of the current plan.

General Trends

- The high demand for conifer products continues to result in conifer dominated areas having a higher percentage of harvest.

- Previous difficulties in marketing poplar timber are essentially non-existent and these areas are readily harvested. White birch, however, continues to be the least marketable of the major commercial species and, as such, white birch dominated areas tend not to be harvested unless there is a significant proportion of other species associated with them (such as poplar or spruce).

- In the four years since the October 2001 snowdown event, salvage operations have occurred on over 9,131.5 hectares (not including salvage area harvested during 2004-2005). Although this is a small percentage relative to the gross area affected by the snowdown event, LLFP continually attempts to address all damaged areas in conjunction with harvesting normal allocations.

- It is expected that normal harvest area operations will rebound to planned annual area levels as snowdown timber quality decreases and salvage operations decline.

## 6.0 SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT

Table 5 presents the summary of managed productive forest area by forest unit. Information prior to 1998 does not exist since the 1998-2003 FMPs for both forests were the first written for each forest. For both the Nakina North and Ogoki Forest 1998-2003 FMPs, the forest units were derived on the basis of species composition and forest types (refer to Table 2). The Total Protection Forest for the Nakina North and Ogoki Forest is 35,294 hectares and 26,426 hectares respectively. In terms of the Unavailable Production Forest, there are 934 hectares on the Nakina North Forest and 990 hectares on the Ogoki Forest. The Nakina North Forest has 257,826 hectares of Available Production Forest compared to 521,890 hectares of available on the Ogoki Forest.

For the 2003-2008 plan, forest units were again derived on the basis of species compositions and forest types. In addition, due to the new updated inventory, eco-site types were used (refer to Table 2). The information presented in Table 5 for this period is similar to that of the previous one except only the area and volume by age class, for each forest unit, for Protection Forest and Available Production Forest is available. The Total Protection Forest area and Total Available Production Forest Area for this plan period on the Ogoki Forest is 134,683.8 hectares and 746,500.7 hectares, respectively.

General Trends

It is difficult to evaluate changes in forest unit area by age class from the 1998-2003 and 2003-2008 plan periods, related to and resulting from forest management activities on the Forest. This is because there have been forest unit area changes and area by age class changes between the plan periods that include, but are not limited to;

- Land base withdrawals from the SFL due to Ontario Living Legacy; and,
- New forest photo-interpretation and Forest Resource Inventory for the entire Ogoki Forest (used for the 2003-2008 FMP).

The dramatic increase in Protection Forest area from 61,720 hectares in 1998-2003 to 134,683.9 in the 2003-2008 planning period is a direct result of the new updated FRI inventory. The most drastic change to the inventory related to Protection Forest occurred during the 1998-2003 Ogoki FMP. This is strictly a result of the difference between the photo interpreters and their interpretation of the photos related to site class 4 stands.

The managed Crown forest area available for timber production is one of the indicators of forest sustainability that describes the forest condition. This information is summarized in Table 1 and Table 5, by forest unit and age class, and shows the current available forest by forest unit. Forest units are aggregations of forest stands that, unlike the working group designation, have more emphasis on site type and stand development relationships.

Table FMP-3b from the 2003-2008 Ogoki FMP was created to assess changes to the land base and inventory since 1998 using the 1998 forest unit definitions. It is included as part of the Table section of this report. The new FRI was classified based on the 1998 forest unit query and compared to Table FMP-3 from the Ogoki and Nakina North FMPs. The changes in area by forest unit are significant and merit some comment. In general, the consensus has been that the 1974 FRI was poorly done with significant errors in interpretation. As well, this inventory is old and many features of the forest have changed as a result of succession and disturbances. There was also some difficulty in accurately representing the area removed by Wabakimi Park and subsequent to 1998, the further removal of land available for management into new OLL Conservation Reserves and parks. In summary, the land base is now smaller than that planned for in 1998 and the area in pine, upland spruce and hardwood forest units has decreased while mixed wood types (often indicative of a succession forest) have increased.

## 7.0 – SUMMARY OF RENEWAL, TENDING AND PROTECTION OPERATIONS

Table 6 presents the summary of renewal, tending and protection operations for the 1998-2003 and 2003-2008 plan periods, for the combined normal and salvage allocations on the Nakina North and Ogoki Forests. No protection operations occurred during either period. Planned renewal and tending areas include FMP amendments made during the plan periods.

For the 1998-2003 period, the planned/projected and actual silvicultural treatment areas for normal/salvage harvest have not been annualized. As part of the salvage amendments approved for the Nakina North and Ogoki Forests, FMP Table 25a was submitted as part of the amendment package that indicated the forecasted renewal and tending operations for the salvage areas. Even though a separate table was created, LLFP has tracked and reported all silviculture activities as normal/salvage rather than separating them out into a normal and a salvage table. As a result, the planned numbers in Table 6 are a combination of the Tables FMP 25 and FMP 25a from each forest.

For the 2003-2008 period, the planned area has been annualized (dividing by five), and the actual treated area, for which information is only available for one year (2003-2004), has not been annualized.

### 1998-2003 Normal/Salvage Harvest Area Renewal and Tending

During the 1998-2003 plan period, only 9% of the planned natural regeneration occurred on the Nakina North Forest and 13% was reported on the Ogoki Forest for a average of 10% on the combined Forest. Generally, LLFP has a delay associated with all natural regeneration treatments and declaring them as such. For example, if an area is harvested in the winter of 2000 the area is assessed the following summer and declared as a natural regeneration treatment in the Spring Annual Report for that year. During the first three years of the 1998-2003 FMPs surveys did not take place as planned and a limited amount of CLAAG and natural areas were assessed and declared as naturally regenerated. In the summer of 2003, an extensive assessment program occurred of prescribed natural regenerated areas and 3,681.2 hectares were declared as natural regeneration treatment in the 2003-2004 Spring Annual Report. In fact, a total of 4,270.2 hectares or 73% of the planned 5,832 hectares were treated through natural regeneration.

Tree planting, site preparation with seeding and mechanical site preparation are the three types of artificial regeneration treatments that occurred on both the Nakina North and Ogoki Forests during the 1998-2003 period. Table 6 identifies that the actual amount of area treated is lower compared to what was planned in both FMPs. This can be attributed to three main factors. The first factor is the inaccuracy of the Ogoki Forest FRI, in particular the area portion of the FRI. It was determined and is documented in the annual reports and letters that the area on the maps is incorrect and generally higher than the actual area in the stand. Since all of the planning occurred using the area identified on the maps, any forecasts using this area would be greater than the actual area treated. The second factor is that silviculture operations did not commence on either the Nakina North or Ogoki Forest until the spring/summer of 2000 with site preparation and seeding; therefore, this delay affects the areas treated during the period compared to what was planned. The third factor is that not all of the area allocated for harvest was harvested on either Forest. This results in a reduced amount of available area for silviculture operations to occur; therefore, not meeting the targets set out in the FMP.

Total 1998-2003 Renewal and Tending

For the 1998-2003 period, for the combined Forest, only 10% of planned area was reported as being regenerated naturally; 68% of planned area was tree planted; 97% of the planned area was site prepared and seeded; and, only 48% of planned area was mechanically site prepared. In general, failure to realize planned renewal areas was the direct result of the delay in the start-up of the silviculture program and FRI area inaccuracies that the Ogoki FMP was developed from.

2003-2008 Normal/Salvage Harvest Area Renewal and Tending

As a result of a change in the Annual Report reporting requirements only the first year of the 2003-2008 plan period is documented in this report. Based on the first year of the 2003-2008 FMP, 136% of the planned natural regeneration has occurred (predominantly in the Slow3 future forest unit). This is a result of the catch up of reporting naturally regenerated sites, which was discussed previously. The area reported as naturally regenerated in the 2003-2004 period was harvested during the later years of the 1998-2003 Nakina North and Ogoki FMP periods. All of the areas harvested during the first year of the 2003-2008 plan period would be recorded as naturally regenerated in the 2004-2005 Annual Report, which is now required to be submitted in November 2005. Therefore, the total areas naturally regenerated during the first two years of the plan are currently being assessed and reported on and are not available at this time.

On the Ogoki Forest during the first year of the 2003-2008 period, tree planting, site preparation with seeding and site preparation are the main types of artificial regeneration that occurred. In relation to the previous 1998-2003 FMPs, the trend illustrated during that period has continued into the new plan with 74% of the annual planned area being treated with tree plant and 84% of the annual planned area being site prepared. The site preparation with seeding is the only treatment that does not follow the same trend to date; the areas schedule for silviculture treatment did not have the site characteristics that are generally treated with this prescription.

Total 2003-2008 Renewal and Tending

On an annual basis, based on the first year of the 2003-2008 FMP, 136% of planned area was regenerated naturally; 62% of planned area has been tree planted or seeded; and, 84% of planned area has been mechanically site prepared.

General Trends

- Natural regeneration continues to be relied upon for hardwoods (predominantly Poplar/Aspen forest units) and the Spruce lowlands sites, while the majority of conifer regeneration on upland sites is accomplished through artificial means. Natural regeneration is generally not reported on until one year following harvest to facilitate more accurate mapping of actual depletion areas (aerial photography is acquired the following fiscal year), and to verify silvicultural post-harvest treatment prescriptions.

- Spruce and Jack Pine continue to be the dominant conifer species artificially regenerated.

- More attention is being directed to managing for mixedwood future forest types (mixed conifer and spruce and poplar mixedwoods), as opposed to consistently striving for pure conifer plantations.

## 8.0 – SUMMARY OF HARVEST AREA SUCCESSFULLY REGENERATED

Table 7 presents the status of regeneration for the areas harvested ten years period prior to the IFA period (fiscal year 1990-1995). Since harvesting on the units only began in 1998 there is no information available for this period in terms of harvest or silviculture activities.

Table 7a however, presents the status of regeneration for the areas harvested during the two year period prior to the IFA period (fiscal years 1998-1999 and 1999-2000). Based on historical harvest depletion information from the 1998-1999 and 1999-2000 Fall Annual Reports for both the Nakina North and Ogoki Forests, a total of 6,348 hectares were harvested. Based on the silviculture ground rules no stands have met the time requirement past treatment to achieve free to grow status therefore 0 hectares has been entered into Table 7a. It is important to note that although free-to-grow surveys have not occurred to date, three-year surveys of the treated areas began in the summer of 2003. Harvesting operations only began on the Nakina North and Ogoki Forests in 1998, which resulted in the silviculture program starting 2000. As a result, neither the natural or artificial regeneration treatments require a silviculture assessment until the summer of 2005, which is outside of the audit period.

Of the 6,348 hectares harvested, 6,314 hectares is currently classified as not-sufficiently regenerated (NSR). However, a substantial portion of the NSR area has received artificial silvicultural treatment and will be assessed in the near future. In Table 7a, a total of 34 hectares of the total area harvested area is classified as 'Not Available for Regeneration (NAR)'. LLFP has classified this area as NAR because it is associated with primary and secondary roads that were constructed during the 1998-2000 period; the area will not be regenerated.

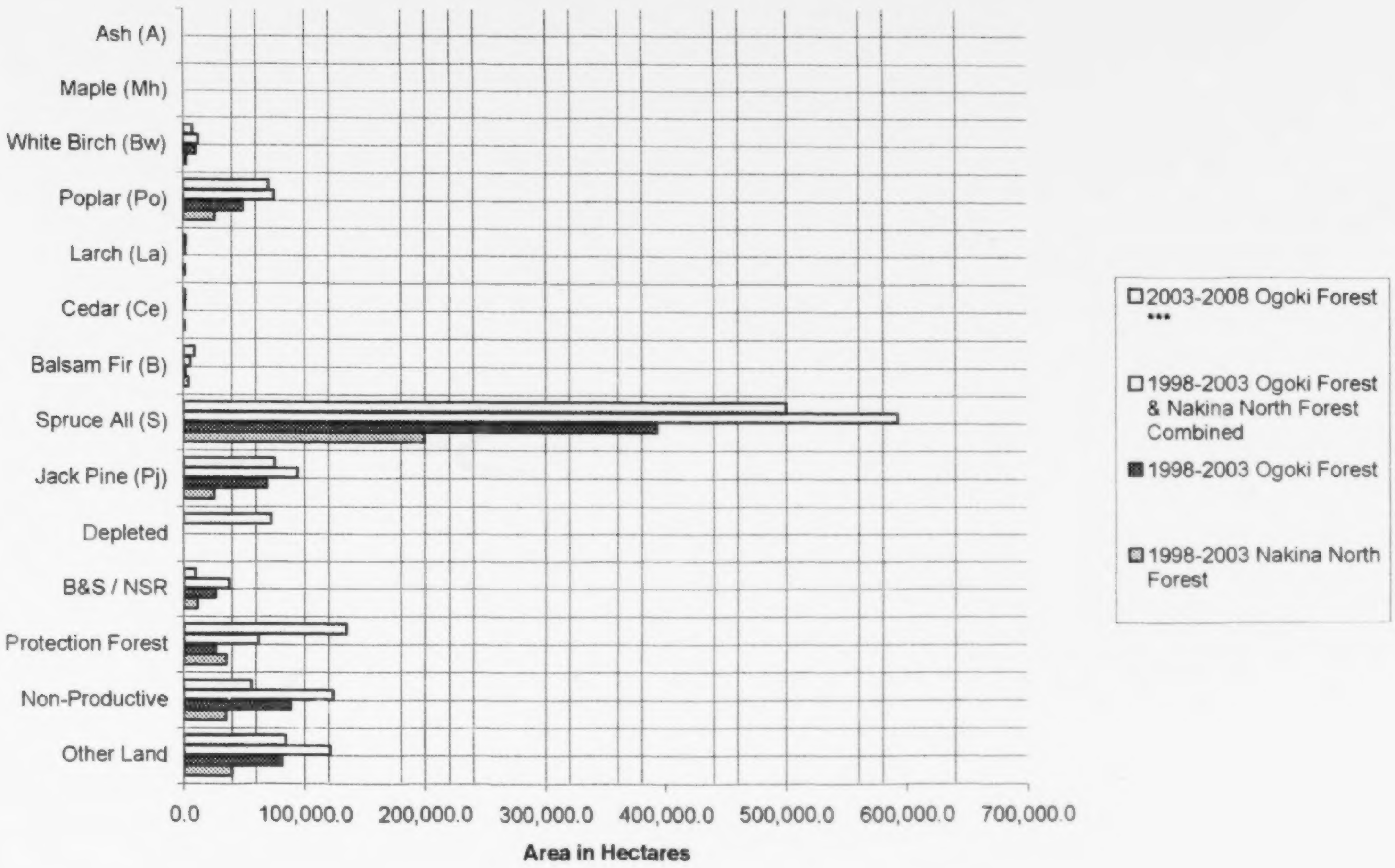
## General Trends

- For this specific harvest period, there were no regeneration surveys completed. It will be necessary to assess the regeneration status of these areas once they reach the assessment timeframe.
- In general, the progress of all post harvest silvicultural treatments (natural and artificial) is now monitored with more diligence, relative to the historical regeneration monitoring program. As part of the 2003-2008 FMP, the company has implemented a new strategy to assess all regenerated areas three years after establishment and then again at the free-to grow year depending on the forest unit. Although the three year information is used for internal purposes, it will assist in tracking how the regeneration projects are progressing at an earlier stage than free-to-grow.

**Table 1 - Summary of Total Area Under Management Past and Current Plans - Crown Managed**

| LAND TYPE | Past Plans | | | Current |
|---|---|---|---|---|
| | 1998-2003 Nakina North Forest | 1998-2003 Ogoki Forest | 1998-2003 Ogoki Forest & Nakina North Forest Combined | 2003-2008 Ogoki Forest |
| **Non-Forested** | | | | |
| Other Land | 39,700.0 | 81,177.0 | 120,877.0 | 84,415.8 |
| Forested | | | | |
| Non-Productive | 34,875.0 | 88,572.0 | 123,447.0 | 55,969.2 |
| Productive - Protection Forest | 35,294.0 | 26,426.0 | 61,720.0 | 134,683.9 |
| Productive - Production Forest | | | | |
| B&S / NSR | 11,022.0 | 26,426.0 | 37,448.0 | 9,584.1 |
| Depleted | 0.0 | 0.0 | 0.0 | 72,315.9 |
| **Forest Stands by Working Group** | | | | |
| Jack Pine (Pj) | 25,188.0 | 69,213.0 | 94,401.0 | 75,313.2 |
| Spruce All (S) | 199,386.0 | 392,811.0 | 592,197.0 | 499,668.6 |
| Balsam Fir (B) | 4,217.0 | 1,183.0 | 5,400.0 | 8,833.6 |
| Cedar (Ce) | 748.0 | 0.0 | 748.0 | 1,472.3 |
| Larch (La) | 1,416.0 | 81.0 | 1,497.0 | 1,593.8 |
| Poplar (Po) | 25,766.0 | 49,271.0 | 75,037.0 | 70,457.8 |
| White Birch (Bw) | 2,067.0 | 10,351.0 | 12,418.0 | 7,260.8 |
| Maple (Mh) | 0.0 | 0.0 | 0.0 | 0.0 |
| Ash (A) | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total Production Forest** | 269,810.0 | 549,336.0 | 819,146.0 | 746,500.1 |
| **Total Forested Land** | 339,979.0 | 664,334.0 | 1,004,313.0 | 937,153.2 |

**Source:** 1998-2003 Nakina North Forest FMP - Tables FMP-1 & FMP-2
1998-2003 Ogoki Forest FMP - Tables FMP-1 & FMP-2
2003-2008 Ogoki Forest FMP - Tables FMP-1 & FMP-2



**2005 Independent Forest Audit - Nakina North & Ogoki Forest**
**Summary of Total Area Under Managment**

MANAGEMENT UNIT NAME: Ogoki Forest
IFA TERM: April 1, 2000 - March 31, 2005

Table 2 - Description of Forest Units

| Forest Unit |  | Forest | Main | Eco Site | Silvicultural | FRI Parameters | Additional |
|---|---|---|---|---|---|---|---|
| Code | Name | Type | Working Group | Type(s) | System | & Criteria | Information |
|  |  |  |  |  |  |  | (average species composition) |
| **1998 - 2003 Nakina North & Ogoki Forests** |  |  |  |  |  |  |  |
| Pj1 | Jack Pine (S.C. X,1,2) | Conifer | Jack Pine | 13,14,20 | Clearcut | (Pj>=0.5) (Po+Bw+Oh<=0.2) | (Pj8 Sb2), (Pj7Sb3) |
| SpUp | Upland Spruce (S.C. X,1,2) | Conifer | Black Spruce | 21,27,14,20,22,25,26,32 | Clearcut | (Sb >=0.4 & Sb<=0.9) (Po+Bw+Oh<=0.2) (Pj<0.5) | (Sb8 Pj1 Po1) |
| Slow1 | Lowland Spruce (S.C. X,1,2) | Conifer | Black Spruce | 22,25,26,31 | Clearcut | (Sb=1) or (Ce+Oc>=0.2)(Sb=1) or (Ce+Oc>=0.2) | (Sb0) |
| Slow3 | Lowland Spruce (S.C. 3) | Conifer | Black Spruce | 34,35,36 | Clearcut | (Sb=1) or (Ce+Oc>=0.2)(Sb=1) or (Ce+Oc>=0.2) | (Sb0), (Sb8Oc2) |
| CnFO | Jack Pine / Spruce (S.C. 3) | Conifer | Jack Pine | 11,12,20,22 | Clearcut | (Sb<1.0) (Po+Bw+Oh<0.2) (Ce+Oc<0.1) | (Pj6 Sb3 Po1), (Pj6Sb4) |
| MxWd1 | Mixedwood (S.C. X,1,2) | Mixedwood | Poplar | 19,21,27,28,29,32,33 | Clearcut | (Po+Bw+Oh<0.8) (Sb+Sw+Pj<0.9) (Ce+Oc<0.2) | (Sb4 Po3 Pj2 Bw), (Sb4Po3Bw1Bf1Pj1) |
| MxWd3 | Mixedwood (S.C. 3) | Mixedwood | Poplar | 16,23 | Clearcut | (Po+Bw+Oh<0.8) (Sb+Sw+Pj<0.9) (Ce+Oc<0.2) | (Sb4 Po3 Pj2 Bw1), (Po4Sb3Pj2Bw1) |
| Hw1 | Hardwood (S.C. X,1,2) | Intolerant | Poplar | 19,28,29,33 | Clearcut | (Po+Bw+Oh>=0.8) | (Po7 Bw2 Sb1), (Po8Bw1Sb1) |
| Hw3 | Hardwood (S.C. 3) | Intolerant | Poplar | 16,23 | Clearcut | (Po+Bw+Oh>=0.8) | (Po6 Bw3 Sb1), (Po7 Bw2 Sb1) |
| **2003-2008 Ogoki Forest** |  |  |  |  |  |  |  |
| Slow3 | Site Class 3,4 Lowland | Conifer | Black Spruce - Lowland | 22, 31, 34, 35, 36 | Clearcut | Site Description code* = '1' or 'L' or Sb+Ce+La = 100% and Site Class = 3 or 4 | Sb9 Oc1 |
| Slow1 | Site Class X,1,2 Lowland | Conifer | Black Spruce - Lowland | 22, 31, 34, 35, 36 | Clearcut | Site Description Code = '1' or 'L' or Sb+Ce+La =100% and Ce+La = 10% and site class = X, 1, or 2 | Sb 9 Oc1 |
| SpUp | Upland Spruce | Conifer | Black Spruce - Upland | 12, 13, 14, 20, 21, 22, 26, 31 | Clearcut | Sb+Sw>= 70% And Po+Bw<= 30% And Po<= 20% | Sb9 Pj1 |
| PjPur | Jack Pine | Conifer | Jack Pine | 12, 13, 14, 20, 21, 22, 25, 26, 31 | Clearcut | Pj>= 60% And Po+Bw<= 30% And Po<= 20% | Pj7 Sb2 Po1 |
| PoPur | Poplar | Intolerant Hardwood | Poplar | 16, 19, 28 | Clearcut | Po>= 60% | Po7 Sb 1Pj1 Bw1 |
| CoMx1 | Spruce Pine Fir Mixed | Conifer | Black Spruce, Jack Pine, Balsam, Fir | 12, 13, 14, 20, 21, 22, 25, 26 | Clearcut | Sb+Sw+Pj+Bf>= 70% And Po+Bw<= 30% And Po<= 20% | Sb5 Pj3 Bf1 Po1 |
| HrdMx | Hardwood Mixed Wood | Intolerant Hardwood | Poplar - Birch | 16, 19, 28 | Clearcut | Po+Bw+Lh>= 60% | Po4 Bw3 Sb2 Pj 1 |
| CnMx2 | Conifer Mixed Wood | Mixedwood | Spruce, Jack Pine, Poplar | 14, 16, 19, 20, 21, 22, 26 | Clearcut | Pj+Sb+Sw+Bf+Ce+La>= 50% | Sb4 Po3 Pj3 |

Sources: 1998-2003 Nakina North Forest 1998-2003 Forest Management Plan Table FMP-8 & Ogoki Forest 1998-2003 Forest Management Plan Table FMP-8
2003-2008 Ogoki Forest 2003-2008 Forest Management Plan Table FMP-8

**MANAGEMENT UNIT NAME: Ogoki Forest**
**IFA TERM: April 1, 2000 - March 31, 2005**

Table 2 - Description of Forest Units

| Forest Unit | | Forest | Main | Eco Site | Silvicultural | FRI Parameters | Additional |
|---|---|---|---|---|---|---|---|
| Code | Name | Type | Working Group | Type(s) | System | & Criteria | Information (average species composition) |
| **1998 - 2003 Nakina North & Ogoki Forests** | | | | | | | |
| Pj1 | Jack Pine (S.C. X,1,2) | Conifer | Jack Pine | 13,14,20 | Clearcut | (Pj>=0.5) (Po+Bw+Oh<=0.2) | (Pj8 Sb2), (Pj7Sb3) |
| SpUp | Upland Spruce (S.C. X,1,2) | Conifer | Black Spruce | 21,27,14,20,22,25,26,32 | Clearcut | (Sb >=0.4 & Sb<=0.9) (Po+Bw+Oh<=0.2) (Pj<0.5) | (Sb8 Pj1 Po1) |
| Slow1 | Lowland Spruce (S.C. X,1,2) | Conifer | Black Spruce | 22,25,26,31 | Clearcut | (Sb=1) or (Ce+Oc>=0.2)(Sb=1) or (Ce+Oc>=0.2) | (Sb0) |
| Slow3 | Lowland Spruce (S.C. 3) | Conifer | Black Spruce | 34,35,36 | Clearcut | (Sb=1) or (Ce+Oc>=0.2)(Sb=1) or (Ce+Oc>=0.2) | (Sb0), (Sb8Oc2) |
| CnFr3 | Jack Pine / Spruce (S.C. 3) | Conifer | Jack Pine | 11,12,20,22 | Clearcut | (Sb<1.0) (Po+Bw+Oh<0.2) (Ce+Oc<0.1) | (Pj6 Sb3 Po1), (Pj6Sb4) |
| MxWd1 | Mixedwood (S.C. X,1,2) | Mixedwood | Poplar | 19,21,27,28,29,32,33 | Clearcut | (Po+Bw+Oh<0.8) (Sb+Sw+Pj<0.9) (Ce+Oc<0.2) | (Sb4 Po3 Pj2 Bw), (Sb4Po3Bw1Bf1Pj1) |
| MxWd3 | Mixedwood (S.C. 3) | Mixedwood | Poplar | 16,23 | Clearcut | (Po+Bw+Oh<0.8) (Sb+Sw+Pj<0.9) (Ce+Oc<0.2) | (Sb4 Po3 Pj2 Bw1), (Po4Sb3Pj2Bw1) |
| Hw1 | Hardwood (S.C. X,1,2) | Intolerant | Poplar | 19,28,29,33 | Clearcut | (Po+Bw+Oh>=0.8) | (Po7 Bw2 Sb1), (Po8Bw1Sb1) |
| Hw3 | Hardwood (S.C. 3) | Intolerant | Poplar | 16,23 | Clearcut | (Po+Bw+Oh>=0.8) | (Po6 Bw3 Sb1), (Po7 Bw2 Sb1) |
| **2003 - 2008 Ogoki Forest** | | | | | | | |
| Slow3 | Site Class 3,4 Lowland | Conifer | Black Spruce - Lowland | 22, 31, 34, 35, 36 | Clearcut | Site Description code* = '1' or 'L' or Sb+Ce+La = 100% and Site Class = 3 or 4 | Sb9 Oc1 |
| Slow1 | Site Class X,1,2 Lowland | Conifer | Black Spruce - Lowland | 22, 31, 34, 35, 36 | Clearcut | Site Description Code = '1' or 'L' or Sb+Ce+La =100% and Ce+La > 10% and site class = X, 1, or 2 | Sb 9 Oc1 |
| SpUp | Upland Spruce | Conifer | Black Spruce - Upland | 12, 13, 14, 20, 21, 22, 26, 31 | Clearcut | Sb+Sw>= 70% And Po+Bw<= 30% And Po<= 20% | Sb9 Pj1 |
| PjPur | Jack Pine | Conifer | Jack Pine | 12, 13, 14, 20, 21, 22, 25, 26, 31 | Clearcut | Pj>= 60% And Po+Bw<= 30% And Po<= 20% | Pj7 Sb2 Po1 |
| PoPur | Poplar | Intolerant Hardwood | Poplar | 16, 19, 28 | Clearcut | Po>= 60% | Po7 Sb 1Pj1 Bw1 |
| CoMx1 | Spruce Pine Fir Mixed | Conifer | Black Spruce, Jack Pine, Balsam Fir | 12, 13, 14, 20, 21, 22, 25, 26 | Clearcut | Sb+Sw+Pj+Bf>= 70% And Po+Bw<= 30% And Po<= 20% | Sb5 Pj3 Bf1 Po1 |
| HwdMx | Hardwood Mixed Wood | Intolerant Hardwood | Poplar - Birch | 16, 19, 28 | Clearcut | Po+Bw+Lh>= 60% | Po4 Bw3 Sb2 Pj 1 |
| CoMx2 | Conifer Mixed Wood | Mixedwood | Spruce, Jack Pine, Poplar | 14, 16, 19, 20, 21, 22, 26 | Clearcut | Pj+Sb+Sw+Bf+Ce+La>= 50% | Sb4 Po3 Pj3 |

**Sources:** : 1998-2003 : Nakina North Forest 1998-2003 Forest Management Plan Table FMP-8 & Ogoki Forest 1998-2003 Forest Management Plan Table FMP-8
2003-2008 : Ogoki Forest 2003-2008 Forest Management Plan Table FMP-8

8/22/2005

MANAGEMENT UNIT NAME: Ogoki Forest
IFA TERM: April 1, 2000 - March 31, 2005

## Table 3a - Summary of Planned & Actual Harvest Volumes
## Normal Harvest

### Average Planned Annual Harvest Volumes - Incorporates FMP Amendments

**Volumes are Annualized for the indicated 5 year period**

| Species | Volume in Cubic metres | | | |
|---|---|---|---|---|
| | Past Plans | | | Current |
| | 1998-2003 Nakina North Forest | 1998-2003 Ogoki Forest | 1998-2003 Ogoki Forest & Nakina North Forest Combined | 2003-2008 Ogoki Forest *** |
| Jack Pine (Pj) | 34,374 | 82,759 | 117,132 | 104,945 |
| Spruce All (S) | 142,836 | 227,989 | 370,825 | 370,035 |
| Balsam Fir (B) | 1,238 | 0 | 1,238 | 7,053 |
| Cedar (Ce) | 0 | 0 | 0 | 1,022 |
| Larch (La) | 1,952 | 613 | 2,565 | 3,219 |
| **Conifer All *** | **180,400** | **311,360** | **491,760** | **486,275** |
| Poplar (Po) | 38,371 | 64,275 | 102,646 | 84,878 |
| White Birch (Bw) | 1,312 | 7,996 | 9,307 | 8,124 |
| Maple (Mh) | 0 | 0 | 0 | 0 |
| Ash (A) | 0 | 0 | 0 | 0 |
| **Hardwood All *** | **39,683** | **72,271** | **111,954** | **93,002** |
| **Total Planned Volumes** | **220,083** | **383,631** | **603,714** | **579,277** |

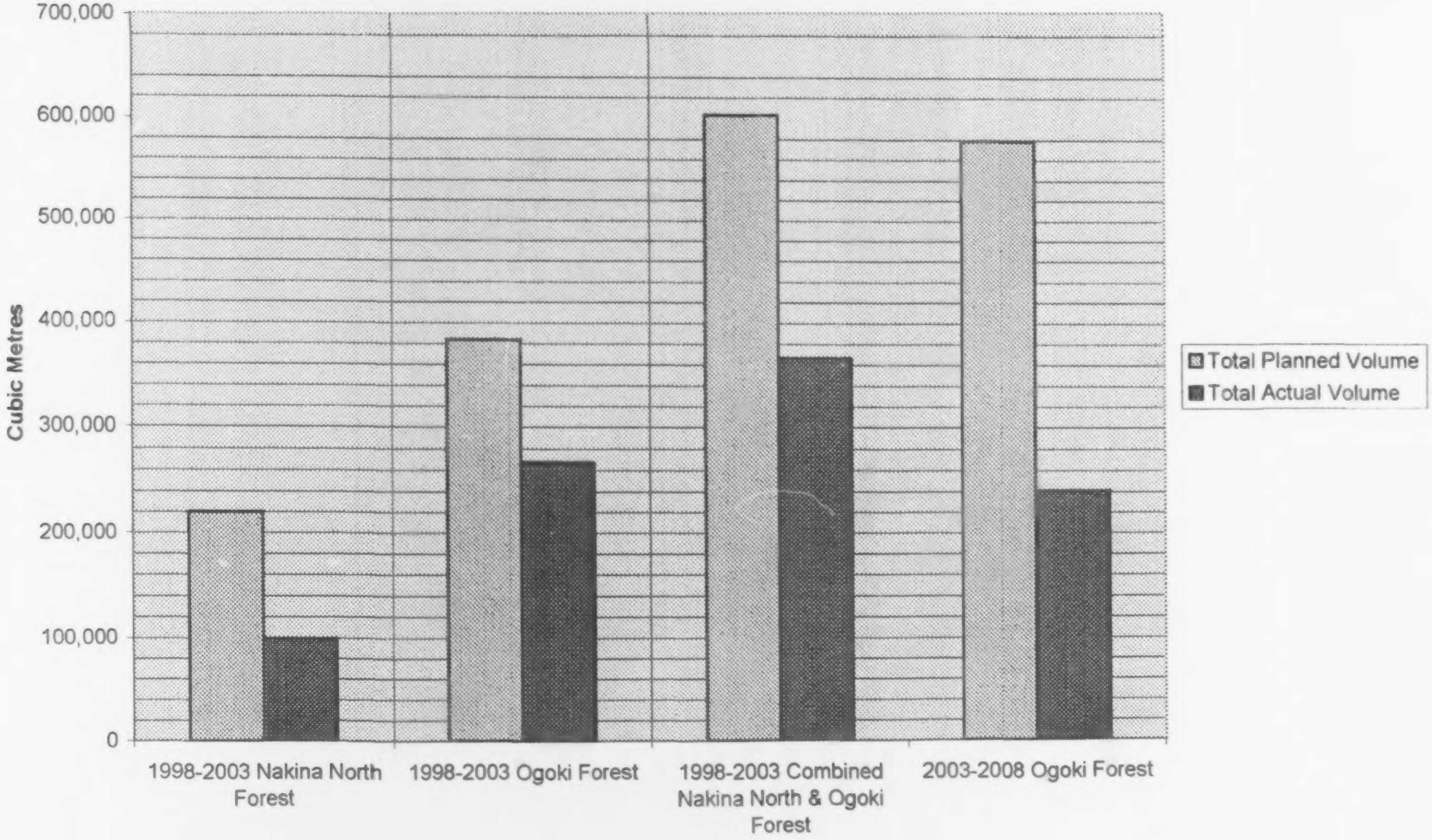
### Actual Harvest Volumes

**Volumes are Annualized for the indicated 5 year period**

| Species | Volume in Cubic metres | | | |
|---|---|---|---|---|
| | Past Plans | | | Current |
| | 1998-2003 Nakina North Forest | 1998-2003 Ogoki Forest | 1998-2003 Ogoki Forest & Nakina North Forest Combined | 2003-2008 Ogoki Forest *** |
| Jack Pine (Pj) | 23,325 | 87,169 | 110,493 | 67,162 |
| Spruce All (S) | 54,767 | 158,014 | 212,781 | 124,343 |
| Balsam Fir (B) | 2,461 | 6,775 | 9,236 | 4,176 |
| Cedar (Ce) | 0 | 2 | 2 | 0 |
| Larch (La) | 1,269 | 706 | 1,976 | 919 |
| **Conifer All *** | **81,822** | **252,666** | **334,489** | **196,600** |
| Poplar (Po) | 17,055 | 14,368 | 31,423 | 44,285 |
| White Birch (Bw) | 136 | 543 | 678 | 326 |
| Maple (Mh) | 0 | 0 | 0 | 0 |
| Ash (A) | 0 | 0 | 0 | 0 |
| **Hardwood All *** | **17,191** | **14,911** | **32,101** | **44,611** |
| **Total Planned Volumes** | **99,013** | **267,577** | **366,590** | **241,211** |

| Sources: : | |
|---|---|
| | 1998-2003 : Nakina North Forest 1998-2003 RPFO - Table RPFO 4 |
| | 1998-2003 : Ogoki Forest 1998-2003 RPFO - Table RPFO 4 |
| | 2003-2008 : Ogoki Forest 2003-2004 Fall Annual Report - Table AR-3 |

**2005 Independent Forest Audit - Nakina North & Ogoki Forest Total Planned & Actual Normal Harvest Volumes (Annualized)**



**MANAGEMENT UNIT NAME: Ogoki Forest**
**IFA TERM: April 1, 2000 - March 31, 2005**

**Table 3b - Summary of Planned & Actual Harvest Volumes**
**Salvage Harvest**

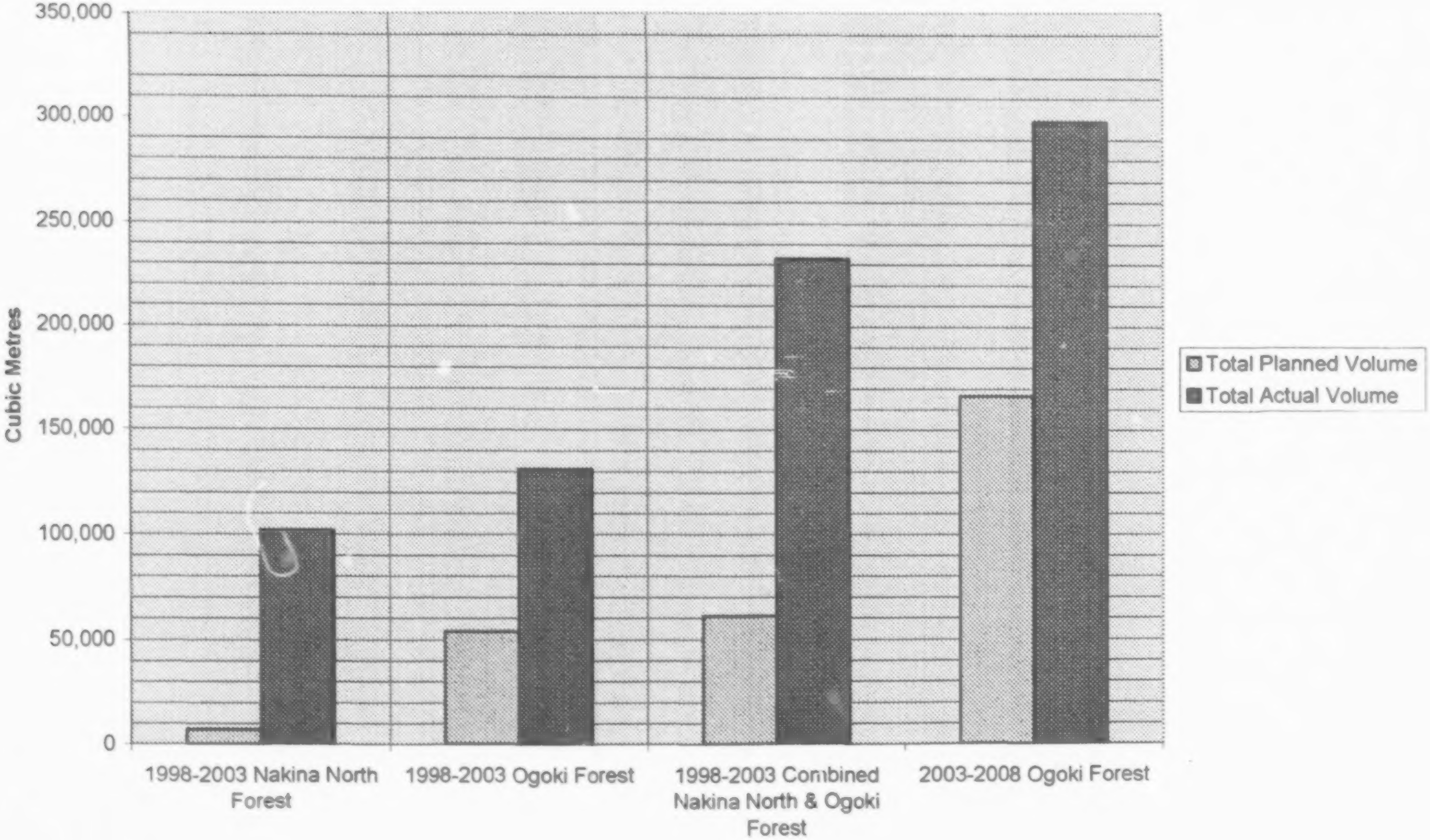
**Average Planned Annual Harvest Volumes - Incorporates FMP Amendments**
**Volumes are Annualized for the indicated 5 year period**

| | Volume in Cubic metres | | | |
|---|---|---|---|---|
| | Past Plans | | | Current |
| Species | 1998-2003 Nakina North Forest | 1998-2003 Ogoki Forest | 1998-2003 Ogoki Forest & Nakina North Forest Combined | 2003-2008 Ogoki Forest *** |
| Jack Pine (Pj) | 3,788 | 6,238 | 10,026 | 33,357 |
| Spruce All (S) | 2,795 | 36,643 | 39,438 | 108,386 |
| Balsam Fir (B) | 167 | 54 | 220 | 1,754 |
| Cedar (Ce) | 0 | 0 | 0 | 290 |
| Larch (La) | 0 | 0 | 0 | 998 |
| **Conifer All *** | **6,749** | **42,935** | **49,684** | **144,785** |
| Poplar (Po) | 342 | 10,780 | 11,121 | 20,525 |
| White Birch (Bw) | 79 | 0 | 79 | 1,244 |
| Maple (Mh) | 0 | 0 | 0 | 0 |
| Ash (A) | 0 | 0 | 0 | 0 |
| **Hardwood All *** | **421** | **10,780** | **11,200** | **21,768** |
| **Total Planned Volumes** | **7,170** | **53,714** | **60,884** | **166,553** |

**Actual Harvest Volumes**
**Volumes are Annualized for the indicated 5 year period**

| | Volume in Cubic metres | | | |
|---|---|---|---|---|
| | Past Plans | | | Current |
| Species | 1998-2003 Nakina North Forest | 1998-2003 Ogoki Forest | 1998-2003 Ogoki Forest & Nakina North Forest Combined | 2003-2008 Ogoki Forest *** |
| Jack Pine (Pj) | 10,858 | 54,404 | 65,262 | 78,895 |
| Spruce All (S) | 88,797 | 76,496 | 165,293 | 218,962 |
| Balsam Fir (B) | 1,026 | 287 | 1,313 | 579 |
| Cedar (Ce) | 0 | 0 | 0 | 0 |
| Larch (La) | 1,229 | 11 | 1,240 | 429 |
| **Conifer All *** | **101,910** | **131,198** | **233,107** | **298,865** |
| Poplar (Po) | 0 | 0 | 0 | 0 |
| White Birch (Bw) | 0 | 0 | 0 | 0 |
| Maple (Mh) | 0 | 0 | 0 | 0 |
| Ash (A) | 0 | 0 | 0 | 0 |
| **Hardwood All *** | **0** | **0** | **0** | **0** |
| **Total Planned Volumes** | **101,910** | **131,198** | **233,107** | **298,865** |

**Sources: :**
1998-2003 : Nakina North Forest 1998-2003 RPFO - Table RPFO 4
1998-2003 : Ogoki Forest 1998-2003 RPFO - Table RPFO 4
2003-2008 : Ogoki Forest 2003-2004 Fall Annual Report - Table AR-3



2005 Independent Forest Audit - Nakina North & Ogoki Forest Total Planned & Actual Salvage Harvest Volumes (Annualized)

**MANAGEMENT UNIT NAME: Ogoki Forest**
**IFA TERM: April 1, 2000 - March 31, 2005**

## Table 4: Summary Report of Depletion Area: Comparison to the Selected Management Alternative - Annualized

**1998-2003 Salvage Areas are annualized for a 2 year period as snowdown salvage operations commenced in 2001-2002.**
**Actual area information for 2003-2008 available for only one year (2003-2004)**

| Forest Unit | Harvest and Bypass | | | Reserves | | | Fire | | Insects | | Other | | Total | | | Planned Salvage (ha) | Actual Salvage (ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Available Harvest Area (ha) | Planned (ha) | Actual (ha) | Projected (ha) | Planned (ha) | Actual (ha) | Projected (ha) | Actual (ha) | Projected (ha) | Actual (ha) | Projected (ha) | Actual (ha) | Projected (ha) | Planned (ha) | Actual (ha) | | |
| **Ogoki Forest 1998-2003** | | | | | | | | | | | | | | | | | |
| Pj1 | 386.0 | 390.0 | 261.8 | 62.8 | 19.6 | 5.0 | - | 4.8 | - | - | - | 43.3 | 448.8 | 409.6 | 266.8 | 4.4 | 259.1 |
| SpUp | 657.0 | 685.0 | 585.4 | 107.0 | 37.4 | 23.3 | - | 16.5 | - | - | - | 2.3 | 764.0 | 722.4 | 608.6 | 150.3 | 223.5 |
| Slow1 | 804.0 | 824.0 | 602.2 | 130.8 | 53.0 | 32.5 | - | 27.1 | - | - | - | 1.4 | 934.8 | 877.0 | 634.7 | 83.9 | 487.3 |
| Slow3 | 448.0 | 320.0 | 251.1 | 73.0 | 24.2 | 13.7 | - | 6.1 | - | - | - | 0.7 | 521.0 | 344.2 | 264.8 | 54.5 | 157.0 |
| CnFr3 | 110.0 | 70.0 | 64.9 | 18.0 | 3.4 | 2.3 | - | - | - | - | - | 0.1 | 128.0 | 73.4 | 67.3 | 24.0 | 40.7 |
| MxWd1 | 705.0 | 778.0 | 643.5 | 114.8 | 53.6 | 38.3 | - | 7.7 | - | - | - | 6.3 | 819.8 | 831.6 | 681.8 | 118.8 | 266.4 |
| MxWd3 | 3.0 | 31.0 | 15.9 | 0.4 | 5.6 | 0.3 | - | - | - | - | - | - | 3.4 | 36.6 | 16.2 | - | 27.1 |
| Hw1 | 78.0 | 80.0 | 87.5 | 12.6 | 1.2 | 0.3 | - | - | - | - | - | - | 90.6 | 81.2 | 87.8 | 17.6 | 24.6 |
| Hw3 | 1.0 | - | 0.8 | 0.2 | - | - | - | - | - | - | - | - | 1.2 | - | 0.8 | - | - |
| Sc4 | - | - | 8.8 | - | - | - | - | 6.1 | - | - | - | - | - | - | 8.8 | - | 7.3 |
| **Total** | **3,192.0** | **3,178.0** | **2,521.8** | **519.6** | **198.0** | **115.7** | - | **68.3** | - | - | - | **54.2** | **3,711.6** | **3,376.0** | **2,637.5** | **453.2** | **1,472.8** |
| **Nakina North Forest 1998-2003** | | | | | | | | | | | | | | | | | |
| Pj1 | 114.0 | 128.4 | 131.8 | 18.6 | 3.0 | 1.7 | - | - | - | - | - | - | 176.8 | 148.0 | 133.6 | 32.2 | 40.3 |
| SpUp | 442.2 | 427.2 | 345.9 | 72.0 | 36.8 | 23.0 | - | - | - | - | - | - | 549.2 | 464.6 | 369.0 | 12.1 | 404.7 |
| Slow1 | 442.2 | 397.0 | 182.9 | 72.0 | 51.6 | 23.4 | - | 3.6 | - | - | - | - | 573.0 | 450.0 | 215.7 | - | 558.2 |
| Slow3 | 228.2 | 249.8 | 132.5 | 37.2 | 46.4 | 9.5 | - | 8.0 | - | - | - | - | 301.2 | 274.0 | 142.0 | 14.0 | 322.2 |
| CnFr3 | 54.0 | 34.0 | 25.4 | 8.8 | 3.8 | 2.4 | - | - | - | - | - | - | 72.0 | 37.4 | 28.2 | - | 25.3 |
| MxWd1 | 43.0 | 89.4 | 10.2 | 7.0 | 17.8 | 0.7 | - | - | - | - | - | - | 157.8 | 143.0 | 11.5 | - | 5.9 |
| MxWd3 | 11.0 | 25.0 | 23.9 | 1.8 | 3.8 | - | - | - | - | - | - | - | 11.4 | 30.6 | 23.9 | 1.8 | 15.3 |
| Hw1 | 96.0 | 103.8 | 92.8 | 15.6 | 22.4 | 0.9 | - | - | - | - | - | - | 108.6 | 105.0 | 93.9 | 1.2 | 71.8 |
| Hw3 | 36.0 | 11.6 | 8.9 | 5.8 | 1.0 | 0.2 | - | - | - | - | - | - | 36.2 | 11.6 | 9.2 | - | 11.9 |
| Sc4 | - | - | 7.0 | - | - | 0.1 | - | - | - | - | - | - | - | - | 7.1 | - | 22.5 |
| **Total** | **1,466.6** | **1,466.2** | **961.4** | **238.8** | **186.6** | **62.0** | - | **11.6** | - | - | - | - | **1,986.2** | **1,664.2** | **1,034.0** | **61.2** | **1,477.9** |
| **Combined Nakina North & Ogoki Forest 1998-2003** | | | | | | | | | | | | | | | | | |
| Pj1 | 500.0 | 518.4 | 393.6 | 81.4 | 22.6 | 6.7 | - | 4.8 | - | - | - | 43.3 | 625.6 | 557.6 | 400.4 | 36.5 | 299.4 |
| SpUp | 1,099.2 | 1,112.2 | 931.3 | 179.0 | 74.2 | 46.3 | - | 16.5 | - | - | - | 2.3 | 1,313.2 | 1,187.0 | 977.6 | 162.4 | 628.2 |
| Slow1 | 1,246.2 | 1,221.0 | 785.1 | 202.8 | 104.6 | 55.9 | - | 30.7 | - | - | - | 1.4 | 1,507.8 | 1,327.0 | 850.4 | 83.9 | 1,025.5 |
| Slow3 | 676.2 | 569.8 | 383.5 | 110.2 | 70.6 | 23.2 | - | 14.1 | - | - | - | 0.7 | 822.2 | 618.2 | 406.7 | 68.4 | 479.1 |
| CnFr3 | 164.0 | 104.0 | 90.3 | 26.8 | 7.2 | 4.7 | - | - | - | - | - | 0.1 | 200.0 | 110.8 | 95.4 | 24.0 | 65.9 |
| MxWd1 | 748.0 | 867.4 | 653.7 | 121.8 | 71.4 | 39.0 | - | 7.7 | - | - | - | 6.3 | 977.6 | 974.6 | 693.3 | 118.8 | 272.3 |
| MxWd3 | 14.0 | 56.0 | 39.8 | 2.2 | 9.4 | 0.3 | - | - | - | - | - | - | 14.8 | 67.2 | 40.1 | 1.8 | 42.4 |
| Hw1 | 174.0 | 183.8 | 180.3 | 28.2 | 23.6 | 1.3 | - | - | - | - | - | - | 199.2 | 186.2 | 181.6 | 18.8 | 96.3 |
| Hw3 | 37.0 | 11.6 | 9.7 | 6.0 | 1.0 | 0.2 | - | - | - | - | - | - | 37.4 | 11.6 | 9.9 | - | 11.9 |
| Sc4 | - | - | 15.9 | - | - | 0.1 | - | 6.1 | - | - | - | - | - | - | 15.9 | - | 29.8 |
| **Total** | **4,658.6** | **4,644.2** | **3,483.2** | **758.4** | **384.6** | **177.7** | - | **79.9** | - | - | - | **54.2** | **5,697.8** | **5,040.2** | **3,671.5** | **514.4** | **2,950.6** |
| **Ogoki Forest 2003-2008** | | | | | | | | | | | | | | | | | |
| PjPur | 560.0 | 546.0 | 371.3 | 93.0 | 45.0 | 91.8 | - | - | - | - | - | - | 802.4 | 705.6 | 534.0 | 384.9 | 247.0 |
| SpUp | 2,369.0 | 2,288.4 | 812.7 | 449.2 | 243.0 | 85.0 | - | - | - | - | - | - | 1,862.4 | 1,651.6 | 1,346.6 | 1,056.0 | 1,175.8 |
| Slow1 | 816.0 | 759.0 | 231.1 | 191.0 | 100.2 | 61.2 | - | - | - | - | - | - | 2,080.8 | 1,777.0 | 1,066.1 | 632.3 | 391.7 |
| Slow3 | 770.0 | 715.6 | 149.0 | 192.8 | 58.8 | 49.5 | - | - | - | - | - | - | 1,123.4 | 892.2 | 548.7 | 504.5 | 410.1 |
| PoPur | 325.0 | 299.0 | 119.3 | 67.0 | 29.6 | 4.2 | - | - | - | - | - | - | 272.0 | 148.2 | 123.6 | 151.5 | 196.2 |
| CoMx1 | 700.0 | 667.6 | 705.5 | 174.6 | 65.8 | 44.0 | - | - | - | - | - | - | 1,135.4 | 1,117.6 | 704.8 | 414.0 | 500.8 |
| CoMx2 | 365.0 | 277.6 | 63.9 | 79.8 | 27.8 | 15.7 | - | - | - | - | - | - | 26.2 | 97.8 | 64.0 | 264.0 | 308.7 |
| HwdMx | 106.0 | 102.2 | 28.6 | 23.2 | 2.8 | 0.1 | - | - | - | - | - | - | 307.8 | 291.2 | 275.5 | 13.0 | - |
| **Total** | **6,011.0** | **5,655.4** | **2,481.4** | **1,270.6** | **573.0** | **351.5** | - | - | - | - | - | - | **7,610.4** | **6,681.2** | **4,663.4** | **3,420.0** | **3,230.3** |

**Sources:**
1998-2003 Nakina North Forest 1998-2003 RPFO - Table RPFO 1
1998-2003 Ogoki Forest 1998-2003 RPFO - Table RPFO 1
2003-2008 Ogoki Forest 2003-2004 Fall Annual Report - Table AR-1

**2005 Independent Forest Audit - Nakina North & Ogoki Forest**
**Total Planned and Actual Normal & Salvage Harvest Area (Annualized)**

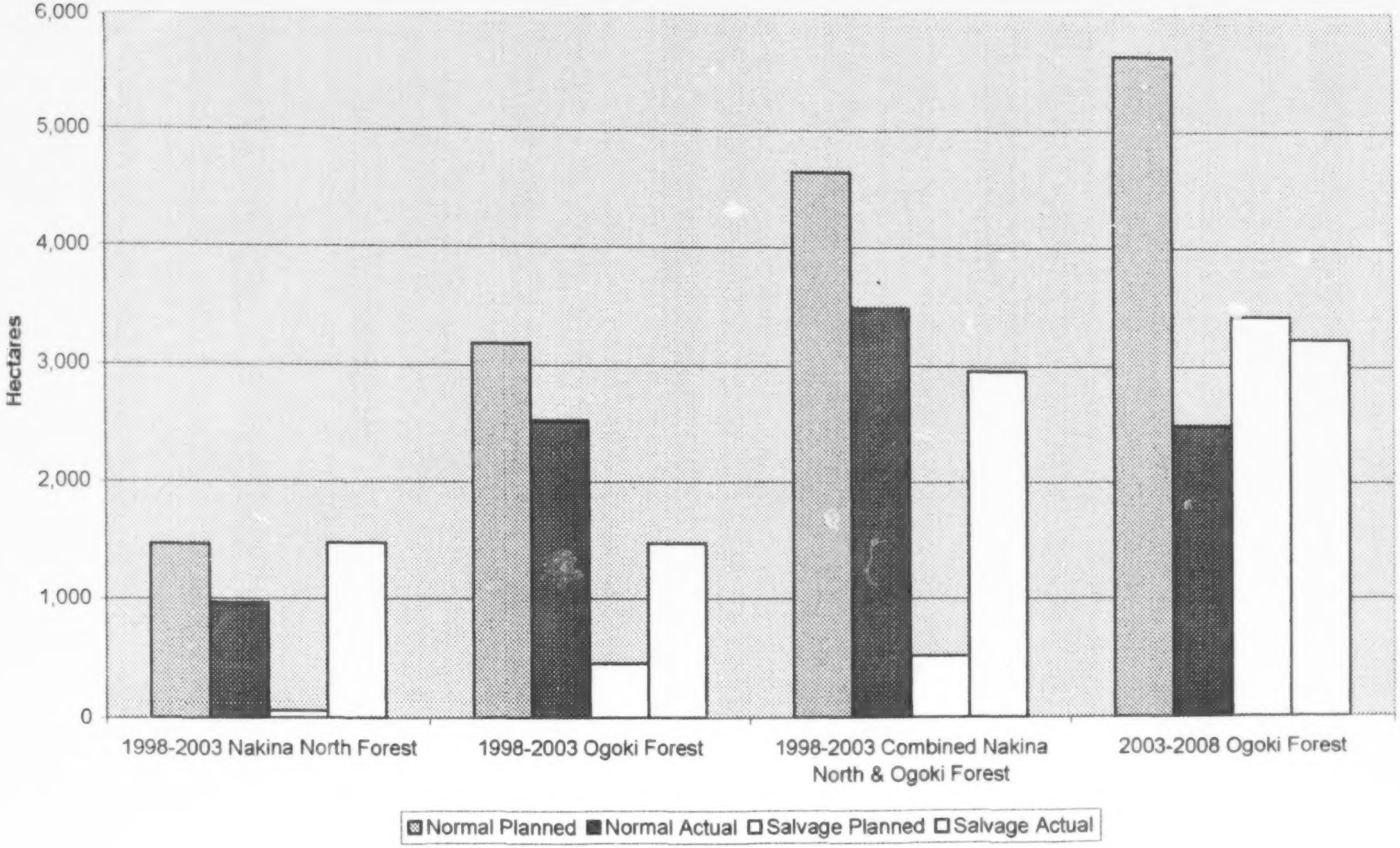


**Table 5: Summary of Managed Productive Forest by Forest Unit**

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| | | | | Nakina North Forest 1998-2003 | | | | |
| Pj1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 39 | - |
| | 021-040 | - | - | - | - | | 307 | 5,805 |
| | 041-060 | - | - | - | - | | 2,030 | 182,735 |
| | 061-080 | - | - | 1 | 220 | | 1,711 | 235,605 |
| | 081-100 | - | - | 12 | 2,032 | | 3,140 | 547,976 |
| | 101-120 | - | - | 2 | 416 | | 2,182 | 391,304 |
| | 121-140 | - | - | - | - | | 414 | 49,478 |
| | 141-160 | - | - | - | - | | 11 | 451 |
| | 161-180 | - | - | - | - | | - | - |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **-** | **-** | **15** | **2,668** | | **9,834** | **1,413,354** |
| SpUp | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 49 | 924 |
| | 021-040 | - | - | - | - | | 87 | 787,450 |
| | 041-060 | 8 | 648 | - | - | | 10,201 | 1,460,729 |
| | 061-080 | 7 | 763 | 21 | 2,827 | | 11,307 | 1,769,554 |
| | 081-100 | - | - | 109 | 17,797 | | 10,717 | 1,703,595 |
| | 101-120 | 8 | 1,384 | 23 | 4,112 | | 9,480 | 965,193 |
| | 121-140 | 19 | 2,983 | 12 | 1,740 | | 6,515 | 212,918 |
| | 141-160 | 2 | 244 | 16 | 1,927 | | 1,730 | 19,062 |
| | 161-180 | - | - | 3 | 279 | | 189 | 9,806 |
| | 181-200 | - | - | - | - | | 142 | - |
| **Sub-Total** | | **44** | **6,022** | **184** | **28,682** | **-** | **50,417** | **6,929,231** |
| Slow1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 2,589 | - |
| | 021-040 | - | - | - | - | | 472 | 282 |
| | 041-060 | - | - | - | - | | 4,141 | 12,007 |
| | 061-080 | - | - | 8 | 595 | | 5,208 | 374,685 |
| | 081-100 | - | - | 45 | 5,420 | | 6,494 | 844,173 |
| | 101-120 | - | - | 7 | 1,113 | | 9,699 | 1,504,704 |
| | 121-140 | - | - | 34 | 5,192 | | 20,999 | 3,203,430 |
| | 141-160 | - | - | 165 | 22,473 | | 20,181 | 2,864,222 |
| | 161-180 | - | - | - | - | | 408 | 47,881 |
| | 181-200 | - | - | - | - | | 349 | 27,363 |
| **Sub-Total** | | **-** | **-** | **259** | **34,793** | **-** | **70,540** | **8,878,747** |
| Slow3 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 7,857 | - |
| | 021-040 | 66 | - | - | - | | 330 | - |
| | 041-060 | 1,426 | - | - | - | | 4,985 | - |
| | 061-080 | 2,266 | 4,394 | 3 | 4 | | 2,217 | 4,611 |
| | 081-100 | 729 | 40,080 | 20 | 1,185 | | 4,211 | 277,302 |
| | 101-120 | 3,763 | 305,259 | 45 | 4,068 | | 11,956 | 1,077,128 |
| | 121-140 | 7,154 | 620,479 | 91 | 8,757 | | 21,308 | 2,059,805 |
| | 141-160 | 15,826 | 1,300,798 | 73 | 6,793 | | 16,376 | 1,586,359 |
| | 161-180 | 154 | 10,659 | - | 29 | | 627 | 47,998 |
| | 181-200 | 99 | 4,817 | - | - | | 236 | 12,592 |
| **Sub-Total** | | **31,483** | **2,286,486** | **232** | **20,836** | **-** | **70,103** | **5,065,795** |
| CnFr3 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 67 | - |
| | 021-040 | - | - | - | - | | 149 | - |
| | 041-060 | 262 | 13,154 | - | - | | 7,705 | 397,693 |
| | 061-080 | 2,634 | 191,113 | 7 | 561 | | 3,514 | 261,234 |
| | 081-100 | 13 | 1,469 | 12 | 1,311 | | 924 | 106,055 |
| | 101-120 | 157 | 6,555 | - | - | | 265 | 32,308 |
| | 121-140 | - | - | 1 | 36 | | 193 | 12,324 |
| | 141-160 | 21 | 651 | - | - | | 298 | 11,182 |
| | 161-180 | - | - | - | - | | 40 | 1,212 |
| | 181-200 | - | - | - | - | | 35 | 665 |
| **Sub-Total** | | **3,087** | **212,942** | **20** | **1,908** | **-** | **13,190** | **822,673** |

## MANAGEMENT UNIT NAME: Ogoki Forest
## IFA TERM: April 1, 2000 - March 31, 2005

**Table 5: Summary of Managed Productive Forest by Forest Unit**

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| MxWd1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 49 | - |
| | 021-040 | - | - | - | - | | 175 | 7,483 |
| | 041-060 | - | - | - | - | | 4,653 | 487,975 |
| | 061-080 | 17 | 2,439 | 3 | 485 | | 5,022 | 786,940 |
| | 081-100 | - | - | 80 | 14,885 | | 4,116 | 763,141 |
| | 101-120 | 47 | 8,419 | 1 | 151 | | 3,976 | 727,984 |
| | 121-140 | - | - | 5 | 385 | | 1,921 | 215,398 |
| | 141-160 | - | - | - | 19 | | 159 | 10,480 |
| | 161-180 | - | - | - | - | | 48 | 2,424 |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **64** | **10,858** | **89** | **15,925** | **-** | **20,119** | **3,001,825** |
| MxWd3 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | - | - |
| | 021-040 | - | - | - | - | | 88 | 88 |
| | 041-060 | 126 | 8,771 | 2 | 146 | | 2,443 | 169,268 |
| | 061-080 | 135 | 12,955 | 1 | 119 | | 1,346 | 134,816 |
| | 081-100 | 52 | 6,136 | 8 | 961 | | 1,034 | 131,103 |
| | 101-120 | 74 | 9,752 | 8 | 1,110 | | 360 | 45,178 |
| | 121-140 | - | - | - | - | | 85 | 5,470 |
| | 141-160 | - | - | - | - | | 61 | 1,891 |
| | 161-180 | - | - | - | - | | - | - |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **387** | **37,614** | **19** | **2,336** | **-** | **5,417** | **487,814** |
| Hw1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 81 | - |
| | 021-040 | - | - | - | - | | - | - |
| | 041-060 | - | - | - | - | | 1,856 | 298,281 |
| | 061-080 | - | - | 20 | 4,276 | | 4,593 | 1,001,462 |
| | 081-100 | - | - | 45 | 11,004 | | 5,310 | 1,288,283 |
| | 101-120 | - | - | 47 | 11,485 | | 1,469 | 336,223 |
| | 121-140 | - | - | - | - | | 264 | 28,248 |
| | 141-160 | - | - | - | - | | 17 | 170 |
| | 161-180 | - | - | - | - | | - | - |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **-** | **-** | **112** | **26,765** | **-** | **13,590** | **2,952,667** |
| Hw3 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 225 | - |
| | 021-040 | - | - | - | - | | 49 | 584 |
| | 041-060 | 34 | 3,672 | | | | 1,414 | 138,096 |
| | 061-080 | 14 | 4,080 | 2 | 317 | | 1,556 | 215,705 |
| | 081-100 | 28 | 4,200 | 2 | 331 | | 1,210 | 187,948 |
| | 101-120 | 153 | 21,861 | - | - | | 162 | 25,272 |
| | 121-140 | - | - | - | - | | - | - |
| | 141-160 | - | - | - | - | | - | - |
| | 161-180 | - | - | - | - | | - | - |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **229** | **33,813** | **4** | **648** | **-** | **4,616** | **567,605** |
| **Total** | | **35,294** | **2,587,735** | **934** | **134,561** | **-** | **257,826** | **30,119,711** |
| **Ogoki Forest 1998-2003** | | | | | | | | |
| Pj1 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 179.0 | - |
| | 021-040 | - | - | - | - | | 71.0 | 2,911 |
| | 041-060 | - | - | - | - | | 4,942.0 | 396,687 |
| | 061-080 | - | - | 79.0 | 10,210 | | 16,953.0 | 2,002,585 |
| | 081-100 | - | - | 17.0 | 2,536 | | 6,220.0 | 928,352 |
| | 101-120 | - | - | 2.0 | 316 | | 1,522.0 | 234,951 |
| | 121-140 | - | - | - | - | | 616.0 | 57,836 |
| | 141-160 | 10.0 | 270 | - | - | | *0.0* | - |
| | 161-180 | - | - | - | - | | 50.0 | 1,217 |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **10.0** | **270** | **98.0** | **13,062** | **-** | **30,553.0** | **3,624,539** |

## MANAGEMENT UNIT NAME: Ogoki Forest
## IFA TERM: April 1, 2000 - March 31, 2005

### Table 5: Summary of Managed Productive Forest by Forest Unit

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| SpUp | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 40.0 | - |
| | 021-040 | - | - | - | - | | 250.0 | 6,522 |
| | 041-060 | 46.0 | 2,424 | - | - | | 2,721.0 | 175,221 |
| | 061-080 | 43.0 | 5,375 | 6.0 | 744 | | 11,974.0 | 1,424,430 |
| | 081-100 | 63.0 | 3,311 | 24.0 | 3,578 | | *25,364.0* | 3,661,938 |
| | 101-120 | - | 4,478 | 35.0 | 5,455 | | 21,947.0 | 3,414,534 |
| | 121-140 | 34.0 | 4,862 | 56.0 | 7,196 | | 12,949.0 | 1,659,342 |
| | 141-160 | - | - | 66.0 | 6,718 | | 8,634.0 | 866,561 |
| | 161-180 | - | - | - | - | | 590.0 | 50,740 |
| | 181-200 | - | - | - | - | | 52.0 | 2,860 |
| **Sub-Total** | | **186.0** | **20,450** | **187.0** | **23,691** | - | **84,521.0** | **11,262,148** |
| Slow1 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 21,116.0 | - |
| | 021-040 | - | - | - | - | | *156.0* | - |
| | 041-060 | 26.0 | 52 | - | - | | 1,610.0 | 2,090 |
| | 061-080 | - | -- | 10.0 | 650 | | 8,284.0 | 487,255 |
| | 081-100 | 33.0 | 3,197 | 33.0 | 3,108 | | 21,720.0 | 2,127,109 |
| | 101-120 | - | - | 53.0 | 6,220 | | 35,498.0 | 4,218,591 |
| | 121-140 | - | - | 91.0 | 10,898 | | 38,612.0 | 4,641,371 |
| | 141-160 | - | - | 78.0 | 8,506 | | 25,470.0 | 2,720,936 |
| | 161-180 | - | - | - | - | | 3,667.0 | 344,038 |
| | 181-200 | - | - | - | - | | 153.0 | 10,717 |
| **Sub-Total** | | **59.0** | **3,249** | **265.0** | **29,382** | - | **156,286.0** | **14,552,107** |
| Slow3 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | 84.0 | - | - | - | | 22,731.0 | - |
| | 021-040 | 5.0 | - | - | - | | 0.0 | - |
| | 041-060 | 110.0 | - | - | - | | 1,408.0 | - |
| | 061-080 | 1,449.0 | 4,178 | 5.0 | 4 | | 4,977.0 | 15,603 |
| | 081-100 | 3,406.0 | 147,953 | 22.0 | 932 | | 9,552.0 | 417,093 |
| | 101-120 | 11,861.0 | 707,870 | 61.0 | 3,922 | | 19,224.0 | 1,218,922 |
| | 121-140 | 4,085.0 | 256,459 | 30.0 | 2,050 | | 38,303.0 | 2,622,077 |
| | 141-160 | 1,779.0 | 109,559 | 3.0 | 207 | | 6,872.0 | 465,603 |
| | 161-180 | - | - | - | - | | *1,555.0* | 89,986 |
| | 181-200 | - | - | - | - | | 167.0 | 6,092 |
| **Sub-Total** | | **22,779.0** | **1,226,019** | **121.0** | **7,115** | - | **104,789.0** | **4,835,376** |
| CnFr3 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 1,052.0 | - |
| | 021-040 | 558.0 | 7,592 | 2.0 | 18 | | 215.0 | 1,953 |
| | 041-060 | 1,243.0 | 43,227 | - | - | | 7,847.0 | 206,085 |
| | 061-080 | 217.0 | 13,386 | 2.0 | 74 | | 4,212.0 | 169,704 |
| | 081-100 | 243.0 | 24,176 | 5.0 | 410 | | 1,552.0 | 117,544 |
| | 101-120 | 50.0 | 498 | 8.0 | 696 | | *2,480.0* | 211,419 |
| | 121-140 | 12.0 | 900 | - | - | | 1,191.0 | 69,699 |
| | 141-160 | - | - | - | - | | 106.0 | 4,452 |
| | 161-180 | - | - | - | - | | 91.0 | 3,276 |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **2,323.0** | **89,779** | **17.0** | **1,198** | - | **18,746.0** | **784,132** |
| MxWd1 | B&S | - | - | - | - | | *0.0* | - |
| | 000-020 | - | - | - | - | | 0.0 | - |
| | 021-040 | 16.0 | 336 | - | - | | 513.0 | 27,189 |
| | 041-060 | 54.0 | 4,608 | 6.0 | 690 | | 8,355.0 | 910,657 |
| | 061-080 | 76.0 | 10,472 | 153.0 | 22,707 | | 27,209.0 | 4,211,215 |
| | 081-100 | 76.0 | 13,110 | 27.0 | 4,858 | | 24,204.0 | 4,310,468 |
| | 101-120 | 103.0 | 17,601 | 28.0 | 5,072 | | 14,450.0 | 2,571,500 |
| | 121-140 | 35.0 | 4,047 | 27.0 | 2,079 | | 5,527.0 | 533,851 |
| | 141-160 | - | - | 27.0 | 1,350 | | 2,870.0 | 158,904 |
| | 161-180 | - | - | - | - | | 715.0 | 32,175 |
| | 181-200 | - | - | - | - | | *45.0* | 1,392 |
| **Sub-Total** | | **360.0** | **50,174** | **268.0** | **36,756** | - | **83,888.0** | **12,757,351** |

## MANAGEMENT UNIT NAME: Ogoki Forest
## IFA TERM: April 1, 2000 - March 31, 2005

### Table 5: Summary of Managed Productive Forest by Forest Unit

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| MxWd3 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 0.0 | - |
| | 021-040 | 101.0 | 1,323 | - | - | | 142.0 | 2,556 |
| | 041-060 | 288.0 | 13,422 | 4.0 | 260 | | 6,081.0 | 361,140 |
| | 061-080 | 38.0 | 3,116 | 24.0 | 2,221 | | 3,334.0 | 291,532 |
| | 081-100 | 22.0 | 2,486 | - | - | | 1,923.0 | 211,311 |
| | 101-120 | 17.0 | 1,955 | - | - | | 524.0 | 61,351 |
| | 121-140 | - | - | - | - | | *122.0* | 6,504 |
| | 141-160 | - | - | - | - | | 38.0 | 798 |
| | 161-180 | - | - | - | - | | 0.0 | - |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **466.0** | **22,302** | **28.0** | **2,481** | **-** | **12,164.0** | **935,192** |
| Hw1 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 25.0 | - |
| | 021-040 | - | - | - | - | | 107.0 | 7,704 |
| | 041-060 | - | - | 6.0 | 882 | | 2,573.0 | 356,913 |
| | 061-080 | - | - | - | - | | 9,523.0 | 1,808,331 |
| | 081-100 | - | - | - | - | | 9,944.0 | 2,099,730 |
| | 101-120 | - | - | - | - | | 3,648.0 | 721,527 |
| | 121-140 | 13.0 | 1,248 | - | - | | 215.0 | 15,740 |
| | 141-160 | - | - | - | - | | 3.0 | 48 |
| | 161-180 | - | - | - | - | | 0.0 | - |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **13.0** | **1,248** | **6.0** | **882** | **-** | **26,038.0** | **5,009,993** |
| Hw3 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 35.0 | - |
| | 021-040 | - | - | - | - | | 43.0 | 1,118 |
| | 041-060 | 212.0 | 13,048 | - | - | | 1,696.0 | 138,904 |
| | 061-080 | - | - | - | - | | 1,128.0 | 134,328 |
| | 081-100 | 18.0 | 2,214 | - | - | | 1,765.0 | 243,850 |
| | 101-120 | - | - | - | - | | 238.0 | 31,950 |
| | 121-140 | - | - | - | - | | 0.0 | - |
| | 141-160 | - | - | - | - | | 0.0 | - |
| | 161-180 | - | - | - | - | | 0.0 | - |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **230.0** | **15,262** | **-** | **-** | **-** | **4,905.0** | **550,150** |
| **Total** | | **26,426.0** | **1,428,753** | **990.0** | **114,567** | **-** | **521,890.0** | **54,310,988** |
| **Nakina North & Ogoki Forest 1998-2003 (Combined)** | | | | | | | | |
| Pj1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 218.0 | - |
| | 021-040 | - | - | - | - | | 378.0 | 8,716 |
| | 041-060 | - | - | - | - | | 6,972.0 | 579,422 |
| | 061-080 | - | - | 80.0 | 10,430 | | 18,664.0 | 2,238,190 |
| | 081-100 | - | - | 29.0 | 4,568 | | 9,360.0 | 1,476,328 |
| | 101-120 | - | - | 4.0 | 732 | | 3,704.0 | 626,255 |
| | 121-140 | - | - | - | - | | 1,030.0 | 107,314 |
| | 141-160 | 10.0 | 270 | - | - | | 11.0 | 451 |
| | 161-180 | - | - | - | - | | 50.0 | 1,217 |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **10.0** | **270** | **113.0** | **15,730** | **-** | **40,387.0** | **5,037,893** |
| SpUp | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 89.0 | 924 |
| | 021-040 | - | - | - | - | | 337.0 | 793,972 |
| | 041-060 | 54.0 | 3,072 | - | - | | 12,922.0 | 1,635,950 |
| | 061-080 | 50.0 | 6,138 | 27.0 | 3,571 | | 23,281.0 | 3,193,984 |
| | 081-100 | 63.0 | 3,311 | 133.0 | 21,375 | | 36,081.0 | 5,365,533 |
| | 101-120 | 8.0 | 5,862 | 58.0 | 9,567 | | 31,427.0 | 4,379,727 |
| | 121-140 | 53.0 | 7,845 | 68.0 | 8,936 | | 19,464.0 | 1,872,260 |
| | 141-160 | 2.0 | 244 | 82.0 | 8,645 | | 10,364.0 | 885,623 |
| | 161-180 | - | - | 3.0 | 279 | | 779.0 | 60,546 |
| | 181-200 | - | - | - | - | | 194.0 | 2,860 |
| **Sub-Total** | | **230.0** | **26,472** | **371.0** | **52,373** | **-** | **134,938.0** | **18,191,379** |

MANAGEMENT UNIT NAME: Ogoki Forest
IFA TERM: April 1, 2000 - March 31, 2005

## Table 5: Summary of Managed Productive Forest by Forest Unit

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| Slow1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 23,705.0 | - |
| | 021-040 | - | - | - | - | | 628.0 | 282 |
| | 041-060 | 26.0 | 52 | - | - | | 5,751.0 | 14,097 |
| | 061-080 | - | - | 18.0 | 1,245 | | 13,492.0 | 861,940 |
| | 081-100 | 33.0 | 3,197 | 78.0 | 8,528 | | 28,214.0 | 2,971,282 |
| | 101-120 | - | - | 60.0 | 7,333 | | 45,197.0 | 5,723,295 |
| | 121-140 | - | - | 125.0 | 16,090 | | 59,611.0 | 7,844,801 |
| | 141-160 | - | - | 243.0 | 30,979 | | 45,651.0 | 5,585,158 |
| | 161-180 | - | - | - | - | | 4,075.0 | 391,919 |
| | 181-200 | - | - | - | - | | 502.0 | 38,080 |
| **Sub-Total** | | **59.0** | **3,249** | **524.0** | **64,175** | **-** | **226,826.0** | **23,430,854** |
| Slow3 | B&S | - | - | - | - | | - | - |
| | 000-020 | 84.0 | - | - | - | | 30,588.0 | - |
| | 021-040 | 71.0 | - | - | - | | 330.0 | - |
| | 041-060 | 1,536.0 | - | - | - | | 6,393.0 | - |
| | 061-080 | 3,715.0 | 8,572 | 8.0 | 8 | | 7,194.0 | 20,214 |
| | 081-100 | 4,135.0 | 188,033 | 42.0 | 2,117 | | 13,763.0 | 694,395 |
| | 101-120 | 15,624.0 | 1,013,129 | 106.0 | 7,990 | | 31,180.0 | 2,296,050 |
| | 121-140 | 11,239.0 | 876,936 | 121.0 | 10,807 | | 59,611.0 | 4,681,882 |
| | 141-160 | 17,605.0 | 1,410,357 | 76.0 | 7,000 | | 23,248.0 | 2,051,962 |
| | 161-180 | 154.0 | 10,659 | - | 29 | | 2,182.0 | 137,984 |
| | 181-200 | 99.0 | 4,817 | - | - | | 403.0 | 18,684 |
| **Sub-Total** | | **54,262.0** | **3,512,505** | **353.0** | **27,951** | **-** | **174,892.0** | **9,901,171** |
| CnFr3 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 1,119.0 | - |
| | 021-040 | 558.0 | 7,592 | 2.0 | 18 | | 364.0 | 1,953 |
| | 041-060 | 1,505.0 | 56,381 | - | - | | 15,552.0 | 603,778 |
| | 061-080 | 2,851.0 | 204,499 | 9.0 | 635 | | 7,726.0 | 430,938 |
| | 081-100 | 256.0 | 25,645 | 17.0 | 1,721 | | 2,476.0 | 223,599 |
| | 101-120 | 207.0 | 7,053 | 8.0 | 696 | | 2,745.0 | 243,727 |
| | 121-140 | 12.0 | 900 | 1.0 | 36 | | 1,384.0 | 82,023 |
| | 141-160 | 21.0 | 651 | - | - | | 404.0 | 15,634 |
| | 161-180 | - | - | - | - | | 131.0 | 4,488 |
| | 181-200 | - | - | - | - | | 35.0 | 665 |
| **Sub-Total** | | **5,410.0** | **302,721** | **37.0** | **3,106** | **-** | **31,936.0** | **1,606,805** |
| MxWd1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 49.0 | - |
| | 021-040 | 16.0 | 336 | - | - | | 688.0 | 34,672 |
| | 041-060 | 54.0 | 4,608 | 6.0 | 690 | | 13,008.0 | 1,398,632 |
| | 061-080 | 93.0 | 12,911 | 156.0 | 23,192 | | 32,231.0 | 4,998,155 |
| | 081-100 | 76.0 | 13,110 | 107.0 | 19,743 | | 28,320.0 | 5,073,609 |
| | 101-120 | 150.0 | 26,020 | 29.0 | 5,223 | | 18,426.0 | 3,299,484 |
| | 121-140 | 35.0 | 4,047 | 32.0 | 2,464 | | 7,448.0 | 749,249 |
| | 141-160 | - | - | 27.0 | 1,369 | | 3,029.0 | 169,384 |
| | 161-180 | - | - | - | - | | 763.0 | 34,599 |
| | 181-200 | - | - | - | - | | 45.0 | 1,392 |
| **Sub-Total** | | **424.0** | **61,032** | **357.0** | **52,681** | **-** | **104,007.0** | **15,759,176** |
| MxWd3 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | - | - |
| | 021-040 | 101.0 | 1,323 | - | - | | 230.0 | 2,644 |
| | 041-060 | 414.0 | 22,193 | 6.0 | 406 | | 8,524.0 | 530,408 |
| | 061-080 | 173.0 | 16,071 | 25.0 | 2,340 | | 4,680.0 | 426,348 |
| | 081-100 | 74.0 | 8,622 | 8.0 | 961 | | 2,957.0 | 342,414 |
| | 101-120 | 91.0 | 11,707 | 8.0 | 1,110 | | 884.0 | 106,529 |
| | 121-140 | - | - | - | - | | 207.0 | 11,974 |
| | 141-160 | - | - | - | - | | 99.0 | 2,689 |
| | 161-180 | - | - | - | - | | - | - |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **853.0** | **59,916** | **47.0** | **4,817** | **-** | **17,581.0** | **1,423,006** |

## MANAGEMENT UNIT NAME: Ogoki Forest
## IFA TERM: April 1, 2000 - March 31, 2005

### Table 5: Summary of Managed Productive Forest by Forest Unit

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| Hw1 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 106.0 | - |
| | 021-040 | - | - | - | - | | 107.0 | 7,704 |
| | 041-060 | - | - | 6.0 | 882 | | 4,429.0 | 655,194 |
| | 061-080 | - | - | 20.0 | 4,276 | | 14,116.0 | 2,809,793 |
| | 081-100 | - | - | 45.0 | 11,004 | | 15,254.0 | 3,388,013 |
| | 101-120 | - | - | 47.0 | 11,485 | | 5,117.0 | 1,057,750 |
| | 121-140 | 13.0 | 1,248 | - | - | | 479.0 | 43,988 |
| | 141-160 | - | - | - | - | | 20.0 | 218 |
| | 161-180 | - | - | - | - | | - | - |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **13.0** | **1,248** | **118.0** | **27,647** | **-** | **39,628.0** | **7,962,660** |
| Hw3 | B&S | - | - | - | - | | - | - |
| | 000-020 | - | - | - | - | | 260.0 | - |
| | 021-040 | - | - | - | - | | 92.0 | 1,702 |
| | 041-060 | 246.0 | 16,720 | - | - | | 3,110.0 | 277,000 |
| | 061-080 | 14.0 | 4,080 | 2.0 | 317 | | 2,684.0 | 350,033 |
| | 081-100 | 46.0 | 6,414 | 2.0 | 331 | | 2,975.0 | 431,788 |
| | 101-120 | 153.0 | 21,861 | - | - | | 400.0 | 57,222 |
| | 121-140 | - | - | - | - | | - | - |
| | 141-160 | - | - | - | - | | - | - |
| | 161-180 | - | - | - | - | | - | - |
| | 181-200 | - | - | - | - | | - | - |
| **Sub-Total** | | **459.0** | **49,075** | **4.0** | **648** | **-** | **9,521.0** | **1,117,755** |
| **Total** | | **61,720.0** | **4,016,488** | **1,924.0** | **249,128** | **-** | **779,716.0** | **84,430,699** |
| **Ogoki Forest 2003-2008** | | | | | | | | |
| CoMx1 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | 182.9 | - | - | - | | 5,265.4 | - |
| | 021-040 | - | - | - | - | | 552.4 | 21,739 |
| | 041-060 | - | - | - | - | | 645.4 | 62,019 |
| | 061-080 | 289.2 | 28,660 | - | - | | 14,432.7 | 2,067,450 |
| | 081-100 | 136.6 | 19,293 | - | - | | 23,476.4 | 3,869,408 |
| | 101-120 | 23.9 | 2,436 | - | - | | 12,690.3 | 1,922,487 |
| | 121-140 | - | - | - | - | | 8,858.9 | 843,587 |
| | 141-160 | 34.3 | 1,884 | - | - | | 3,085.6 | 173,016 |
| | 161-180 | 31.0 | 1,303 | - | - | | 28.6 | 802 |
| | 181-200 | - | - | - | - | | 34.1 | 1,935 |
| **Sub-Total** | | **697.9** | **53,577** | **-** | **-** | | **69,069.8** | **8,962,441** |
| CoMx2 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 2,174.3 | - |
| | 021-040 | - | - | - | - | | 547.7 | 24,814 |
| | 041-060 | - | - | - | - | | 258.8 | 28,058 |
| | 061-080 | 24.3 | 4,230 | - | - | | 8,012.6 | 1,322,301 |
| | 081-100 | 68.0 | 13,120 | - | - | | 12,030.6 | 2,194,817 |
| | 101-120 | 58.4 | 15,713 | - | - | | 8,939.7 | 1,537,308 |
| | 121-140 | - | - | - | - | | 5,960.2 | 491,657 |
| | 141-160 | - | - | - | - | | 2,602.4 | 123,944 |
| | 161-180 | - | - | - | - | | 10.7 | 432 |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **150.7** | **33,063** | **-** | **-** | | **40,537.0** | **5,723,332** |
| HwdMx | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | 3.7 | - | - | - | | 954.5 | - |
| | 021-040 | - | - | - | - | | 283.2 | 8,590 |
| | 041-060 | - | - | - | - | | 494.8 | 52,890 |
| | 061-080 | 233.7 | 27,591 | - | - | | 5,013.0 | 630,989 |
| | 081-100 | 274.2 | 44,384 | - | - | | 5,216.7 | 735,676 |
| | 101-120 | 152.3 | 15,101 | - | - | | 6,941.3 | 897,744 |
| | 121-140 | - | - | - | - | | 1,944.8 | 119,414 |
| | 141-160 | - | - | - | - | | 695.5 | 16,854 |
| | 161-180 | - | - | - | - | | 21.7 | 365 |
| | 181-200 | - | - | - | - | | 14.2 | 242 |
| **Sub-Total** | | **663.9** | **87,076** | **-** | **-** | | **21,579.7** | **2,462,764** |

## MANAGEMENT UNIT NAME: Ogoki Forest
## IFA TERM: April 1, 2000 - March 31, 2005

### Table 5: Summary of Managed Productive Forest by Forest Unit

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| PjPur | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | 805.8 | - | - | - | | 5,575.7 | - |
| | 021-040 | - | - | - | - | | 1,156.1 | 28,040 |
| | 041-060 | 25.2 | 622 | - | - | | 1,179.0 | 73,730 |
| | 061-080 | 1,878.3 | 173,632 | - | - | | 21,316.4 | 2,308,964 |
| | 081-100 | 12.4 | 748 | - | - | | 12,645.9 | 1,785,183 |
| | 101-120 | - | - | - | - | | 7,667.4 | 1,039,572 |
| | 121-140 | 11.9 | 696 | - | - | | 3,883.4 | 250,156 |
| | 141-160 | - | - | - | - | | 899.5 | 22,921 |
| | 161-180 | - | - | - | - | | 11.4 | 262 |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **2,733.6** | **175,698** | **-** | **-** | | **54,334.8** | **5,508,828** |
| PoPur | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 3,488.7 | - |
| | 021-040 | - | - | - | - | | 469.2 | 35,234 |
| | 041-060 | - | - | - | - | | 295.6 | 42,605 |
| | 061-080 | 43.0 | 8,001 | - | - | | 8,661.7 | 1,762,989 |
| | 081-100 | 38.9 | 10,305 | - | - | | 21,969.9 | 4,758,541 |
| | 101-120 | 93.3 | 14,409 | - | - | | 16,189.2 | 3,041,200 |
| | 121-140 | 36.5 | 2,974 | - | - | | 3,898.4 | 267,231 |
| | 141-160 | - | - | - | - | | 644.7 | 11,610 |
| | 161-180 | - | - | - | - | | 16.6 | 185 |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | **211.7** | **35,689** | **-** | **-** | | **55,634.0** | **9,919,595** |
| Slow1 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | 3.3 | - | - | - | | 10,752.7 | - |
| | 021-040 | - | - | - | - | | 153.3 | 109 |
| | 041-060 | - | - | - | - | | 984.8 | 17,750 |
| | 061-080 | - | - | - | - | | 5,198.1 | 454,301 |
| | 081-100 | 12.0 | 1,386 | - | - | | 4,139.7 | 532,105 |
| | 101-120 | 0.6 | 93 | - | - | | 5,406.5 | 720,726 |
| | 121-140 | 26.5 | 2,738 | - | - | | 19,557.1 | 2,091,650 |
| | 141-160 | - | - | - | - | | 54,840.7 | 5,098,232 |
| | 161-180 | 17.7 | 1,403 | - | - | | 16,957.7 | 1,465,731 |
| | 181-200 | - | - | - | - | | 230.0 | 16,974 |
| | 201-220 | - | - | - | - | | 241.6 | 13,130 |
| | 221-240 | - | - | - | - | | 64.3 | 2,318 |
| **Sub-Total** | | **60.1** | **5,620** | **-** | **-** | | **118,526.5** | **10,413,025** |
| Slow3 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | 7,447.1 | - | - | - | | 17,777.0 | - |
| | 021-040 | - | - | - | - | | 240.6 | - |
| | 041-060 | 168.5 | - | - | - | | 1,026.3 | - |
| | 061-080 | 2,687.4 | 11,854 | - | - | | 7,722.4 | 37,006 |
| | 081-100 | 3,646.0 | 159,433 | - | - | | 2,695.5 | 168,448 |
| | 101-120 | 7,993.7 | 426,346 | - | - | | 4,920.0 | 423,236 |
| | 121-140 | 58,829.6 | 3,294,321 | - | - | | 32,757.9 | 2,327,278 |
| | 141-160 | 31,750.1 | 1,641,057 | - | - | | 43,182.0 | 2,660,519 |
| | 161-180 | 10,629.9 | 516,149 | - | - | | 13,211.2 | 718,546 |
| | 181-200 | 137.0 | 8,916 | - | - | | 514.3 | 22,396 |
| | 201-220 | 115.5 | 4,639 | - | - | | 152.5 | 5,959 |
| | 221-240 | - | - | - | - | | 6.1 | 87 |
| | 241-260 | - | - | - | - | | 19.0 | 182 |
| **Sub-Total** | | **123,404.8** | **6,062,715** | **-** | **-** | | **124,224.8** | **6,363,659** |

## MANAGEMENT UNIT NAME: Ogoki Forest
## IFA TERM: April 1, 2000 - March 31, 2005

### Table 5: Summary of Managed Productive Forest by Forest Unit

| Forest Unit | Age Class | Protection Forest | | Production Forest | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Unavailable | | Stage of Management | Available | |
| | | (ha) | m3 | (ha) | m3 | | (ha) | m3 |
| SpUp | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | 461.7 | - | - | - | | 30,965.9 | - |
| | 021-040 | - | - | - | - | | 7,729.1 | 9,441 |
| | 041-060 | 4.5 | 27 | - | - | | 8,843.9 | 123,368 |
| | 061-080 | 389.9 | 25,748 | - | - | | 30,326.5 | 2,479,959 |
| | 081-100 | 2,140.3 | 189,426 | - | - | | 46,594.8 | 5,828,351 |
| | 101-120 | 702.9 | 63,797 | - | - | | 36,148.0 | 4,624,483 |
| | 121-140 | 2,508.3 | 190,858 | - | - | | 62,962.2 | 6,334,621 |
| | 141-160 | 531.3 | 34,491 | - | - | | 36,622.0 | 3,064,214 |
| | 161-180 | 6.6 | 886 | - | - | | 2,056.7 | 159,718 |
| | 181-200 | 15.6 | 748 | - | - | | 245.2 | 16,237 |
| | 201-220 | - | - | - | - | | 35.0 | 1,518 |
| | 221-240 | - | - | - | - | | 64.8 | 3,433 |
| **Sub-Total** | | **6,761.1** | **505,981** | - | - | | **262,594.1** | **22,645,343** |
| SC4 | B&S | - | - | - | - | | 0.0 | - |
| | 000-020 | - | - | - | - | | 0.0 | - |
| | 021-040 | - | - | - | - | | 0.0 | - |
| | 041-060 | - | - | - | - | | 0.0 | - |
| | 061-080 | - | - | - | - | | 0.0 | - |
| | 081-100 | - | - | - | - | | 0.0 | - |
| | 101-120 | - | - | - | - | | 0.0 | - |
| | 121-140 | - | - | - | - | | 0.0 | - |
| | 141-160 | - | - | - | - | | 0.0 | - |
| | 161-180 | - | - | - | - | | 0.0 | - |
| | 181-200 | - | - | - | - | | 0.0 | - |
| **Sub-Total** | | - | - | - | - | | - | - |
| **Total** | | **134,683.8** | **6,959,419** | - | - | | **746,500.7** | **71,998,987** |

**Sources:** 1998-2003 : Nakina North Forest 1998-2003 FMP - Table FMP-9
1998-2003 : Ogoki Forest 1998-2003 FMP - Table FMP-9
2003-2008 : Ogoki Forest 2003-2008 FMP - Table FMP-9

**MANAGEMENT UNIT NAME: Ogoki Forest**
**IFA TERM: April 1, 2000 - March 31, 2005**

## Table 6: Summary Report of Renewal, Tending and Protection Operations

| | Area by Future Forest Unit (ha) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1998-2003 Ogoki Forest | | 1998-2003 Nakina North Forest | | 1998-2003 Nakina North & Ogoki Forests (Combined) | | Ogoki Forest | |
| | Planned | Actual | Planned | Actual | Planned | Actual | Planned | Actual |
| *Renewal* | | | | | | | | |
| **Regeneration** | | | | | | | | |
| **Uneven-Aged Management** | | | | | | | | |
| Selection Cut - Harvest | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total Uneven-Aged Management** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **Even-Aged Management** | | | | | | | | |
| *Natural Regeneration* | | | | | | | | |
| CLAAG | 1,476.9 | 332.2 | 1,096.8 | 257.0 | 2,573.7 | 589.2 | 1,573.5 | 2,711.7 |
| Clearcut | 2,379.5 | 0.0 | 880.0 | 0.0 | 3,259.5 | 0.0 | 1,137.4 | 969.5 |
| Strip Cut | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Seed Tree Cut | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Uniform Shelterwood Seed Cut | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| **Subtotal Natural** | **3,856.4** | **332.2** | **1,976.8** | **257.0** | **5,833.2** | **589.2** | **2,710.9** | **3,681.2** |
| *Artificial Regeneration* | | | | | 0.0 | 0.0 | | |
| Planting | 4,637.0 | 2,888.0 | 1,854.5 | 1,546.0 | 6,491.5 | 4,434.0 | 2,943.9 | 2,185.2 |
| Seeding direct | 160.0 | 0.0 | 78.0 | 0.0 | 238.0 | 0.0 | 0.0 | |
| with site preparation | 869.0 | 1,042.8 | 263.0 | 145.0 | 1,132.0 | 1,187.8 | 1,080.4 | 303.7 |
| Scarification | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| **Subtotal Artificial** | [illegible] | **3,930.8** | **2,195.5** | **1,691.0** | **7,861.5** | **5,621.8** | **4,024.4** | **2,488.9** |
| **Total Even-Aged Management** | [illegible] | **4,263.0** | **4,172.3** | **1,948.0** | **13,713.7** | **6,211.0** | **6,735.3** | **6,170.1** |
| **Total Regeneration** | [illegible] | **4,263.0** | **4,172.3** | **1,948.0** | **13,713.7** | **6,211.0** | **6,735.3** | **6,170.1** |
| **Site Preparation** | | | | | 0.0 | 0.0 | | |
| Mechanical | 7,515.0 | 3,417.2 | 3,032.5 | 1,608.0 | 10,547.5 | 5,021.2 | 2,309.5 | 1,945.6 |
| Chemical | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Prescribed Burn - Conventional | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| ** *Total Slash Pile Burning Area* | N/A | 6,391.0 | N/A | 1,958.0 | N/A | 8,349.0 | N/A | 3,927.9 |
| -4% * Net Area Recovered | | 255.6 | | 78.3 | 0.0 | 334.0 | | 117.9 |
| **Total Site Preparation** | **7,515.0** | **3,672.8** | **3,032.5** | **1,686.3** | **10,547.5** | **5,355.2** | **2,304.0** | **2,063.4** |
| ** **Total Slash Piling Area** | **N/A** | **5,929.7** | **N/A** | **1,951.0** | **N/A** | **7,879.7** | **N/A** | **4,429.2** |
| -0.03 *** Net Area Recovered** | | **177.9** | | **58.5** | **0.0** | **236.4** | | **4,296.3** |
| **Tending** | | | | | **0.0** | **0.0** | | |
| | | | | | | | | |
| ***Total Tending*** | | | | | | | | |
| ***Protection (Insect Pest Control)*** | | | | | | | | |
| | | | | | | | | |
| ***Total Protection*** | | | | | | | | |
| ***Retreatment*** | | | | | | | | |
| Artificial Regeneration | | | | | | | | |
| Planting | | | | | | | | |
| Seeding Direct | | | | | | | | |
| with site preparation | | | | | | | | |
| Site Preparation | | | | | | | | |
| ** *Total Slash Pile Burning Area* | | 129.8 | | 706.0 | | 835.8 | | 706.0 |
| -4% * Net Area Recovered | | 5.2 | | 28.2 | | 33.4 | | 28.2 |
| ***Total Re-treatment*** | | **5.2** | | **28.2** | | **33.4** | | **28.2** |
| ***Supplemental*** | | | | | | | | |
| | | | | | | | | |
| ***Total Supplemental Treatments*** | | | | | | | | |

** Represent the total cutover area for which the associated roadside logging debris (slash) was treated. The matches the method of payment of contractors.

* Represent the portion of the area actually treated. This figure for the burning program was calculated using an average of 1 km of road with 12m wide area of slash for every green cutover area treated. This calculation averaged 4% as the net area. Subsequent to these numbers being used in the Slash Pile Burn report submitted to MNR, a joint MNR Fire and Industry meeting was held to standardize the net area calculation. This group determined that 2.5% was a better representation. Rounded to 3% to meet FIM Technical Specification standards, this became the figure used for the slash piling project.

**Sources:** 1998-2003 : Nakina North Forest 1998-2003 RPFO - Table RPFO 7
1998-2003 : Ogoki Forest 1998-2003 RPFO - Table RPFO 7
2003-2008 : Ogoki Forest 2003-2004 Spring Annual Report - Table AR-6

**MANAGEMENT UNIT NAME: Ogoki Forest**
**IFA TERM: April 1, 2000 - March 31, 2005**

## Table 7: Harvested Area Successfully Regenerated - Summary of All Forest Unit

| | AREA IN HECTARES (All Forest Units Combined) | AREA IN HECTARES (All Forest Units Combined) |
|---|---|---|
| | Even-aged Management | Uneven-aged Management |
| *Total Area Harvested* | - | - |
| *Total Area Surveyed for Regeneration Success* | - | - |
| *Total Unsurveyed Area* | - | - |
| *Total Area Declared Successfully Regenerated* | - | - |
| ***Total Area Surveyed Not Successfully Regenerated*** | - | - |
| *NSR* | - | - |
| *B&S* | - | - |
| *Not Available for Regen (eg. Roads & landings)* | - | - |
| *Other* | - | - |
| ***Percent of Area Surveyed Declared Successfully Regenerated*** | 0.0% | |

**Sources:**

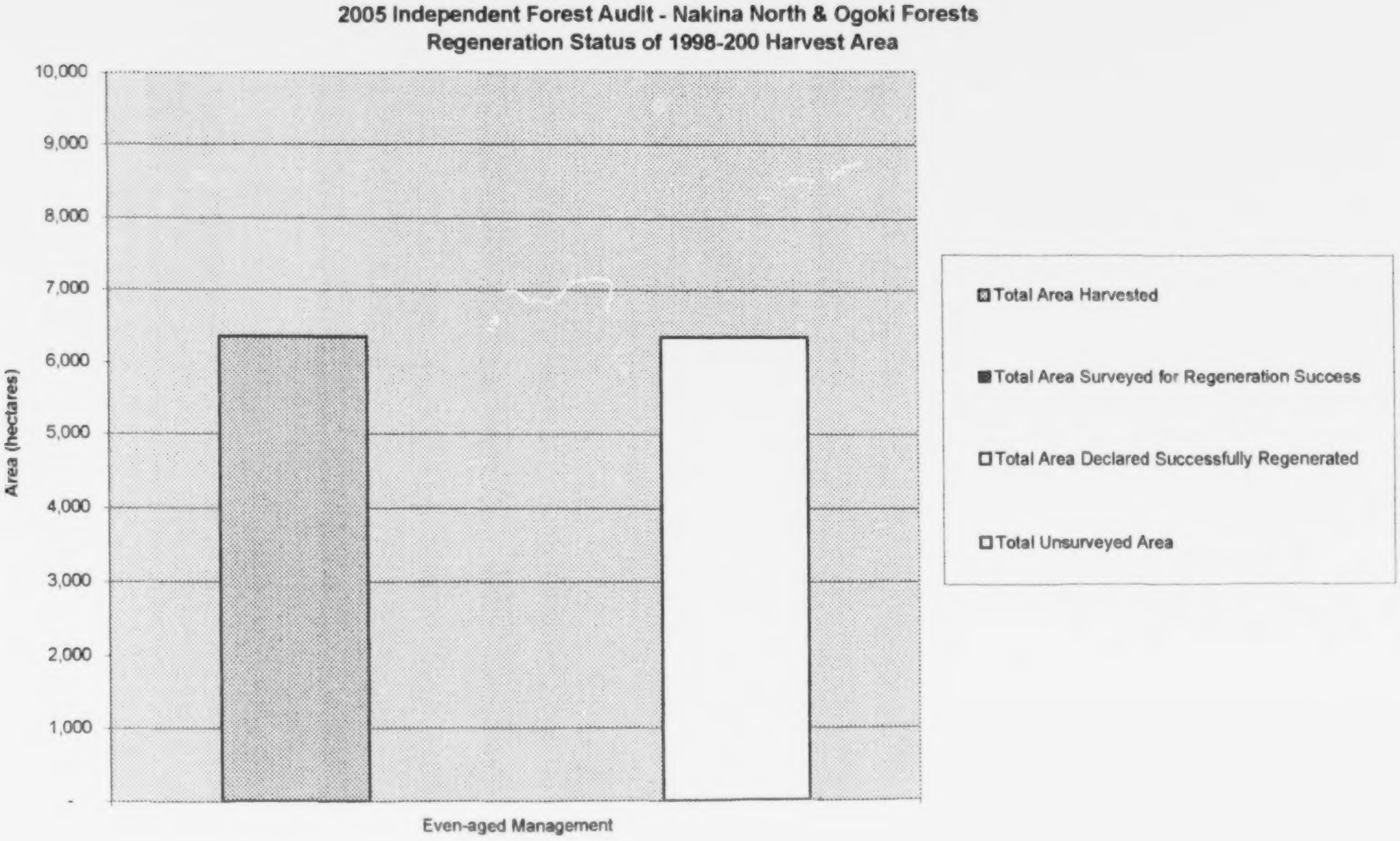
**MANAGEMENT UNIT NAME: Ogoki Forest**
**IFA TERM: April 1, 2000 - March 31, 2005**

## Table 7a: Harvested Area Successfully Regenerated - Summary of All Forest Unit

| | *AREA IN HECTARES (All Forest Units Combined)* | *AREA IN HECTARES (All Forest Units Combined)* |
|---|---|---|
| | **Even-aged Management** | **Uneven-aged Management** |
| *Total Area Harvested* | 6,348 | - |
| *Total Area Surveyed for Regeneration Success* | - | - |
| *Total Unsurveyed Area* | 6,348 | - |
| *Total Area Declared Successfully Regenerated* | - | - |
| ***Total Area Surveyed Not Successfully Regenerated*** | 6,348 | - |
| *NSR* | 6,314 | - |
| *B&S* | - | - |
| *Not Available for Regen (eg Roads & landings)* | 34 | - |
| *Other* | - | - |
| ***Percent of Area Surveyed Declared Successfully Regenerated*** | 0.0% | |

**Sources:**

1998-2003 : Nakina North Forest 1998-2003 RPFO - Table RPFO 1 & RPFO 8
1998-2003 : Ogoki Forest 1998-2003 RPFO - Table RPFO 1 & RPFO 8



2005 Independent Forest Audit - Nakina North & Ogoki Forests
Regeneration Status of 1998-200 Harvest Area

# Appendix B: Audit Team Members and Qualifications

The IFAPP identified the following qualifications for Audit Teams:

Lead Auditor:
- must have a minimum of 7 years recent and relevant experience in forest management and forest operations, in similar types of forests, preferably in Ontario;
- must be trained in auditing procedures and have current forest auditing experience; and
- ideally is certified as an environmental auditor.

Audit Team:
- minimum of two people with experience in forest management planning and forest operations;
- a minimum of one wildlife biologist and/or ecologist;
- minimum of one person with experience in assessing: socioeconomic profiles and the social and economic impacts which may result from forest management planning decisions; public consultation processes in the context of forest management; and First Nations involvement in forest management planning;
- for each individual, minimum of 7 years recent and relevant experience in forest management and forest operations in similar forest types, preferably in Ontario;
- ideally, some Audit Team members will be certified as environmental auditors;
- at least one member of the Audit Team must have demonstrated experience and/or training in the requirements of the FMPM including the strategic direction and determination of sustainability component;
- at least one member of the Audit team shall be a Registered Professional Forester; and
- team size is a minimum of three.

The team for this audit, described in Table B - 1 below, included five people in the following positions: Lead Auditor and Harvesting and Modeling Forester, Wildlife and Roads Expert, Silviculturalist, Planning Auditor, and Consultation Auditor.

**Table B - 1.** The Roles, Responsibilities, and Qualifications of the Audit Team

| Name/Company | Role | Responsibilities | Credentials |
|---|---|---|---|
| Dr. Jeremy Williams, RPF<br>ArborVitae Environmental Services Ltd. | Lead Auditor, Harvesting and Modeling Forester | • overall audit coordination;<br>• oversee activities of other team members;<br>• liaise with Company and MNR;<br>• review and inspect forest harvesting records and practices;<br>• review aspects of forest management related to forest economics and social impacts<br>• reviews FMP modeling inputs and activities | B.Sc.F., Ph.D. (Forest Economics); 15 years consulting experience in Ontario related to forest management, planning, wood supply modeling, and forest economics; participated in 12 previous auditing assignments; certified as an auditor by the Quality Management Institute. |
| Mr. Chris Wedeles<br>ArborVitae Environmental Services Ltd. | Wildlife and Roads Expert | • review and inspect Areas of Concern Documentation and Practices;<br>• review and inspect aspects of forest management related to environmental practices and wildlife management integration;<br>• review and inspect access and water crossings. | B.Sc., M.Sc. (Wildlife Biology); 19 years wildlife and forest ecology and experience in Ontario; completed 22 previous forest audits; certified as an auditor by the Quality Management Institute. |
| Mr. Rob Arnup,<br>Rob Arnup Consulting | Silviculturist | • review and inspect silvicultural practices and related documentation;<br>• review and inspects selected environmental aspects of forest management | B.Sc. Hons. (Biology). Twenty-three years experience in forest management in Ontario; author or co-author of several silvicultural guides and operational manuals; participated in six previous auditing assignments. |
| Mr. Nick Baggs, RPF<br>NGB Forest Management Consulting | Planning Auditor | • review FMP and related documents to ensure compliance with FMPM and TMPM and other regulations | B.Sc.F., R.P.F. 18 years experience in silviculture; considerable experience in Northeastern Ontario; extensive experience in writing forest management plans forest auditing and ecosystem-based management applications and environmental consulting. |
| Dr. Brent Tegler,<br>North-South Environmental Inc | Consultation Auditor | • review documentation related to forest management consultation processes<br>• Consult with stakeholders, LCC, and First Nations regarding forest management issues | Dr. Tegler is an ecologist who is a principal with North-South Environmental Inc. Dr. Tegler has worked extensively in the forest sector of Ontario, as well as in Africa, Papua New Guinea, Solomon Islands, and the US. |

# Appendix C: Independent Forest Audit Guiding Principles

The IFAPP identifies several components of the audit process. The audit protocol constitutes the main framework for the audit. There are eight principles within the audit protocol (Table C - 1). Each principle contains a series of criteria which, if met, will result in the principle being achieved. For each criterion, a number of procedures are used to assess the auditees' compliance and effectiveness.

**Table C - 1.** The Eight Principles Underlying the Audit Protocol, as noted in the IFAPP.

### 1. Commitment

Commitment is reflected in vision, mission and policy statements of the Company. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.

### 2. Public Participation

The process of sustainable forest planning, implementation and monitoring is conducted in an open consultative fashion, with input from all members of the planning team, Local Citizens Committee, native groups, and other parties with an interest in the operations of the forest unit.

### 3. Forest Management Planning

The forest management planning process involves the input of a number of individuals and groups to describe the current condition of the forest, the values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve that goal. Certain minimum standards and procedures have been established upon which all management units are evaluated.

### 4. Plan Implementation

Verification of the actual results of operations in the field compared to the planned operations is required to be able to assess achievement of the plan objectives and compliance with laws and regulations. In conjunction with the review of operations, the reporting tables are tested to ensure accurate results are reported.

### 5. System Support

System support concerns resources and activities needed to support plan implementation so as to achieve the desired objectives. Appropriate control, documentation and reporting procedures must be in place and operational. Planned action should occur at planned times, in planned places and to the planned degree.

### 6. Monitoring

The activities and the effects of these activities in achieving management objectives must be regularly measured and assessed. In particular, the indicators of achievement must be assessed and their effectiveness reviewed.

### 7. Achievement of the Management Objectives and Forest Sustainability

Periodic assessments of the management of the forest unit operations and the forest unit must be made in order to determine whether forest sustainability and other management objectives are being achieved. This includes comparing the actual values of the predetermined indicators against the planned values and assessing the reasons for any significant deviations.

### 8. Contractual Compliance

The licence must comply with the specific requirements of the SFL.

# Appendix D: List of Acronyms

| | |
|---|---|
| **AEDC** | Aroland Economic Development Corporation |
| **AOC** | Area of Concern |
| **ACOP** | Annual Compliance Operating Plan |
| **AHA** | Available Harvest Area |
| **APA** | Annual Plan of Action |
| **AR** | Annual Report |
| **AWS** | Annual Work Schedule |
| **AZA** | Animbiigoo Zaagi'igan Anishinaabek |
| **B&S** | Barren and Scattered |
| **BFP** | Buchanan Forest Products Ltd. |
| **B.Sc.F** | Bachelor of Science in Forestry |
| **CFSA** | Crown Forest Sustainability Act |
| **CIS** | Compliance Information System |
| **Class EA** | Class Environmental Assessment for Timber Management on Crown Lands in Ontario |
| **CLAAG** | Careful Logging Around Advanced Growth |
| **CoMx1** | Conifer 1 mixedwood forest unit |
| **CoMx2** | Conifer 2 mixedwood forest unit |
| **COSEWIC** | Committee on the Status of Endangered Wildlife in Canada |
| **DM** | District Manager |
| **EDC** | Economic Development Corp. |
| **EFDC** | Eabametoong Forest Development Corporation |
| **EMS** | Environmental Management System |
| **ES** | Ecosite |
| **FIM** | Forest Information Manual |
| **FMP** | Forest Management Plan |
| **FMPM** | Forest Management Planning Manual |
| **FOIR** | Forest Operations Inspection Report |
| **FOP** | Forest Operations Prescription |
| **FRI** | Forest Resource Inventory |
| **FRT** | Forest Renewal Trust |
| **FTG** | Free-to-Grow |
| **FU** | Forest unit |
| **GANRAC** | Geraldton Area Natural Resource Advisory Committee |
| **GIS** | Geographic Information System |
| **GPS** | Global Positioning System |
| **HwdMx** | Hardwood mixed forest unit |
| **ha** | Hectares |
| **km** | Kilometers |
| **IFA** | Independent Forest Audit |
| **IFAPP** | Independent Forest Audit Process and Protocol |
| **ISO** | International Standards Organization |
| **KCC** | Kimberly Clark Canada Inc. |
| **LCC** | Local Citizens Committee |
| **LLFP** | Long Lake Forest Products |
| **LWI** | Longlac Wood Industries |
| **$m^3$** | cubic meters |
| **MFFDC** | Marten Falls Forest Development Corporation |

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|---|---|
| **MNR** | Ontario Ministry of Natural Resources |
| **MOEE** | Ministry of the Environment and Energy |
| **MROL** | Ministry approved operating level |
| **NDPEG** | Natural Disturbance Pattern Emulation Guide |
| **NHC** | Nakina Heritage Corporation |
| **NRVIS** | Natural Resource Values Information System |
| **NWR** | Northwest Region |
| **OL** | Overlapping Licence or Overlapping Licensee |
| **OPSEU** | Ontario Public Service Employees Union |
| **PoPur** | Pure poplar forest unit |
| **PrPur** | Pure jack pine forest unit |
| **RD** | Regional Director |
| **RPF** | Registered Professional Forester |
| **RPFO** | Report of Past Forest Operations |
| **RSA** | Resource Stewardship Agreement |
| **SEM** | Silvicultural Effectiveness Monitoring |
| **SGR** | Silvicultural Ground Rule |
| **SFL** | Sustainable Forest Licence |
| **SFM** | Sustainable Forest Management |
| **SFMM** | Strategic Forest Management Model |
| **Slow1** | Spruce Lowland 1 Forest Unit |
| **Slow3** | Spruce Lowland 3 Forest Unit |
| **SIP** | Site Preparation |
| **SGR** | Silvicultural Ground Rules |
| **SpUp** | Spruce upland forest unit |
| **TNMI** | Three Nations Management Inc. |
| **TOR** | Terms of Reference |

## Appendix E: Summary of Input to the Audit Process

### General Public/Other Stakeholders

The Audit Team received very few comments from the general public. Notices soliciting public comments were published in the Geraldton Times-Star and Wawatay News, and all members on the MNR District mailing list were sent a letter and brief questionnaire soliciting input.

One response was received from a remote tourism outfitter. Of the tourism outfitters interviewed, there was a range of opinion concerning the impacts of forest management and operations on tourism outfitters, with some thinking that the Company was doing a good job at maintaining the character of the forest while others disagreed, and said that the noise from operations and the visual impacts were having a negative impact on business conditions. Finally, a letter was received from Longlac Wood Industries, as discussed in the section "Commitment Holders and Overlapping Licensees".

### Local Citizens Committee

The lead auditor and consultation auditor attended a Local Citizens Committee (LCC) meeting held during the audit site visit and presented an overview of the audit process and the LCC's role in the audit. An LCC member participated in the truck portion of the field visits.

The consultation auditor also met with and interviewed 15 members of the LCC during the audit site visit. The LCC members described the activities that had been undertaken by the LCC, the manner in which the LCC functions, and their views of how their advice is sought and considered by MNR. The LCC indicated that they would like to have meetings with LCC's in neighbouring districts from time to time, and expressed some interest in regional LCC meetings, although it was noted that they benefited more from these meeting when they were allowed to organize and set the agenda. However, there was also an understandable reluctance to take on these organizational tasks themselves, as they are volunteers, without some support from MNR.

### Native Communities

The Consultation Auditor interviewed the former General Manager of TNMI by telephone in early November 2005. They had a wide-ranging discussion that covered the more profound lack of management /administrative expertise within the First Nations communities, whether First Nations could ever be expected to fully participate in commercial logging on the scale that large forest companies require and expect, and the other issues that some First Nations are struggling with. It was agreed that there are no easy answers, fixes, or even examples of real success.

A telephone interview was held with Eli Moonias of Marten Falls, who felt that the primary reason for the problems that the community had in establishing a business were due to the limited amount of volume that was available, and lack of sincere interest on the part of the Company in the genuine success of First Nations forestry enterprises on the Ogoki. Mr. Moonias also pointed out that TMNI was evidently a failure and that the debt incurred by the First Nation communities in their efforts to start logging companies now made it increasingly difficult to succeed. Efforts were made to contact representatives of Aroland and Eabametoong First Nation but were unsuccessful. A telephone interview with a representative of Animbiigoo Zaagi'igan Anishinaabek (AZA) was held during the site visit week.

**Commitment Holders and Overlapping Licensees**

The most significant commitments are for the hardwood harvested on the licence and are held by Longlac Wood Industries (LWI) and Neenah Paper (formerly Kimberly Clark Inc). Hardwood utilization has been an issue on the licence, but has been improving throughout the audit period. LLFP and Neenah Paper have developed a good working relationship that has benefited both companies, and Neenah is satisfied with the hardwood volumes they are receiving from LLFP.

Relations between LWI and LLFP are more competitive, although there have been recent signs of improvement. LWI staff indicated that they were willing to purchase every piece of hardwood from the Ogoki Forest and felt that LLFP was in 2003-04, they felt they finally received an appropriate volume of hardwood from the Ogoki Forest. LWI also expressed frustration that they were not able to participate directly in the wood supply modeling process during the development of the 2003 FMP, but noted that they have been given a seat on the planning team for the 2008 FMP. Concerns about utilization of poplar and appropriate renewal of hardwoods were also raised.

Three of the overlapping licence holders are First Nations and, as noted above, we were unable to arrange for an interview with them. We did speak with Nakina Heritage Corporation, who explained that they were quite satisfied with the situation on the Ogoki Forest, although they would prefer to have an overlapping licence for a multi-year term.

**SFL Holder**

Staff from LLFP were interviewed and consulted throughout the audit process and like MNR, were unfailingly helpful in the provision of information and answering auditor questions. Company staff provided their perspectives on the difficulties experienced by the First Nations logging companies, operational changes that the Company is making, the impact of salvage harvesting and natural disturbance on recent harvesting, etc. The Company feels that the caribou mosaic approach is appropriate and pointed out that many of the long term changes in the forest under harvesting would have happened in the absence of harvesting, because the current forest is quite old.

The Company also provided its side of issues such as the question of the Geraldton garage complex, hardwood use, the reasons why there was a considerable amount of recently harvested wood by roadside. The Company affirmed its intention to construct a garage/office complex in Geraldton and stated that the poor economic conditions being faced by the forest sector meant that the Company could not access the required capital. As an indication of its commitment, the Company provided the Audit Team with a letter confirming the transfer of title to LLFP of a block of land that is the proposed complex site. Many of the issues related to hardwood use and roadside wood were economic and logistical in nature.

**Ministry of Natural Resources**

Staff of the Geraldton Area Office of the Ministry of Natural Resources were interviewed throughout the audit process and provided input regarding most of the issues that arose during this audit. The District Manager was also interviewed and a number of regional staff were contacted by telephone, primarily with respect to planning team activities, plan approval, and the caribou mosaic.

The expectations and experiences with respect to First Nations harvesting companies were discussed with many staff, who felt that both they and the Company had done a great deal to support these companies, and indicated a willing ness to continue providing support when it was either requested or as opportunities presented themselves. They felt that they could provide more assistance but were rarely asked, and observed that there had been a recent political flare-up between the First Nations and the Ontario government, but viewed this as a temporary concern.

The Ministry also brought forward concerns related to the garage complex and noted that there was considerable skepticism in some parts of the community about whether the Company intended to follow through on its commitment.